Appendix E: Transportation Impact Analysis

Page Intentionally Left Blank

Draft Report

Initial Study-Mitigated Negative Declaration Transportation Analysis for the 1214 Donnelly Avenue Project

Prepared for the
City of Burlingame

February 28, 2020

490 Mendocino Avenue, Suite 201 **SANTA ROSA**, CA 95401 707.542.9500
505 17th Street, 2nd Floor **OAKLAND**, CA 94612 510.444.2600
1276 Lincoln Avenue, Suite 204 **SAN JOSE**, CA 95125 650.314.8313
w-trans.com

This page intentionally left blank

Table of Contents

This page intentionally left blank

Executive Summary

The proposed 1214 Donnelly Avenue project would result in the construction of 14 condominiums built over 4,704 square feet of ground-floor retail. This project would replace the existing four single-family dwelling units on the site, in addition to developing the two adjacent vacant parcels that formerly housed residential and office land uses. The anticipated trip generation of this project is 242 daily net new trips, including seven during the a.m. peak hour and 22 during the p.m. peak hour.

The study area established by the City of Burlingame includes eight intersections along California Drive, El Camino Real, and Donnelly Avenue. All eight study intersections currently operate acceptably.

Near-Term traffic volumes were developed from nearby approved and proposed projects in the City of Burlingame, in addition to a five-year growth factor applied to the Existing volumes based on anticipated growth from the City/County Association of Governments 2040 Travel Forecast Model. With the added traffic and growth factor applied, all eight study intersections would be expected to continue to operate acceptably.

The anticipated project trip generation was added to the Near-Term traffic volumes to form Near-Term plus Project volumes. Under these volumes, all eight study intersections are expected to continue to operate at an acceptable level.

A vehicle miles traveled (VMT) analysis indicates that the project would contribute 13.43 VMT per capita, which is greater than the citywide average of 8.18 VMT per capita. However, the project is anticipated to have a less-than-significant impact on VMT due to the proximity of high-quality transit, the project's location in Downtown Burlingame, and the small size of the commercial land use.

Sight distances for drivers leaving the proposed project driveway location were assessed and are expected to be adequate if clear lines of sight are maintained through proper selection and maintenance of project vegetation near the street.

The City's requirement for 21 parking spaces would be met with the proposed 23 parking spaces. One space would be designated as van accessible, satisfying the requirement for one van accessible space. In terms of bicycle parking, four short-term spaces would be provided, as well as a bicycle locker and secured lift-assist racks with space for eight bicycles. There are no bicycle spaces required due to the project's land use types and applicable exemptions.

The project was also reviewed for impacts with regard to the CEQA Initial Study checklist and is expected to have a less-than-significant impact under all four transportation/traffic checklist items.

Introduction

This report presents an analysis of the potential transportation impacts that would be associated with development of a proposed residential and commercial retail mixed-use development to be located at 1214 Donnelly Avenue in the City of Burlingame. The transportation analysis was completed in accordance with the criteria described in the City and County Association of Governments' (C/CAG) *Congestion Management Program* (CMP) guidelines, communications with the City of Burlingame, and is consistent with standard traffic engineering techniques.

Prelude

The purpose of a traffic impact study is to provide City staff and policy makers with data they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to an acceptable level as defined by the City's General Plan or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

Project Profile

The proposed project includes 14 condominium units and 4,704 square feet of commercial retail space to replace the existing four single-family housing units on the site, as well as the adjacent vacant lots that formerly contained residential and office uses. An incorporated parking garage is proposed to provide 23 spaces, including 21 residential spaces using a puzzle stacker system, one accessible space, and one space for commercial services or deliveries. Lift-assist bicycle racks would be provided in a secured room with capacity for eight bicycles.

The project site is located on Donnelly Avenue in downtown Burlingame, as shown in Figure 1.

bur009.ai 12/19

1214 Donnelly Avenue IS/MND Transportation Analysis

Figure 1 – Study Area and Existing Lane Configurations

W-Trans

Transportation Setting

Operational Analysis

Study Area and Periods

The study area includes the following intersections:

1. California Drive/Broadway
2. El Camino Real/Chapin Avenue
3. California Drive/Lorton Avenue-Bellevue Avenue
4. Primrose Road/Donnelly Avenue
5. Lorton Avenue/Donnelly Avenue
6. El Camino Real/Burlingame Avenue
7. California Drive/Burlingame Avenue
8. California Drive/Peninsula Avenue

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

Study Intersections

California Drive/Broadway is a four-legged signalized intersection with crosswalks and curb ramps on all legs. There is protected left-turn phasing on both California Drive approaches and the westbound Broadway approach. The signal is operated by a single controller that also operates Broadway/Carolan Avenue, approximately 200 feet to the east. Between these two intersections is an at-grade crossing of two Caltrain tracks, which leaves approximately 60 feet of storage for vehicles between California Drive/Broadway and the tracks. Crosswalks are provided across all four legs and bike lanes are provided on the north leg, including a bicycle box for turning bicyclists on the southbound approach.

El Camino Real/Chapin Avenue is a four-legged signalized intersection with two-phase operation. There are crosswalks and ramps on all intersection legs.

California Drive/Lorton Avenue-Bellevue Ave is a multi-lane roundabout. There are bike sharrows and bicycle ramps on all legs, enabling bicyclists to traverse the roundabout on the road or on the sidewalk. Crosswalks and pedestrian curb ramps are present on all legs. There is a slip lane on the northbound California Drive leg.

Primrose Road/Donnelly Avenue is a tee-intersection with stop controls on the Donnelly Avenue approach. Crosswalks and ramps exist on the Donnelly Avenue leg as well as the south Primrose Road leg.

Lorton Avenue/Donnelly Avenue is a tee-intersection with stop controls on the Donnelly Avenue approach. The Donnelly Avenue leg has curb ramps and a crosswalk.

El Camino Real/Burlingame Avenue is a four-legged signalized intersection with two-phase operation. There are crosswalks and ramps present on all legs.

California Drive/Burlingame Avenue is a signalized tee-intersection with protected left-turn phasing in the northbound direction. Each leg has a corresponding crosswalk and curb ramps.

California Drive/Peninsula Avenue is a four-legged signalized intersection with a two-phase operation. There are crosswalks and curbs ramps on all four legs.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is April 1, 2014 through March 31, 2019.

As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2016 Collision Data on California State Highways*, California Department of Transportation (Caltrans), 2018. The average collision rates differ in value due to the different intersection controls and the number of approaches. The collision histories of intersections with crash rates greater than 10 percent above the statewide average are further examined below. The California Drive/Lorton Avenue-Bellevue Avenue roundabout was excluded from the collision analysis as its construction was completed in April 2019, after the collision analysis period. The collision rate calculations are provided in Appendix A.

Table 1 – Collision Rates at the Study Intersections

Study Intersection	Number of Collisions (2014-2019)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. California Dr/Broadway	19	**0.36**	0.24
2. El Camino Real/Chapin Ave	12	0.25	0.24
3. California Dr/Lorton Ave-Bellevue Ave	N/A	N/A	N/A
4. Primrose Rd/Donnelly Ave	3	**0.30**	0.08
5. Lorton Ave/Donnelly Ave	2	**0.28**	0.08
6. El Camino Real/Burlingame Ave	17	0.21	0.24
7. California Dr/Burlingame Ave	6	0.20	0.19
8. California Dr/Peninsula Ave	12	**0.28**	0.24

Note: c/mve = collisions per million vehicles entering; **Bold** = collision rate is greater than 10 percent above the statewide average

The most common type of collisions at California Drive/Broadway involved eastbound drivers colliding with stopped vehicles. Out of the 19 reported collisions, 11 occurred between 12:00 p.m. and 5:00 p.m. Repainting the signal head housing and backplates may help to counteract afternoon sunlight issues and increase signal visibility. The high incidence of crashes at this location is likely due to congestion, part of which is associated with the rail operation. Improved coordination could help address this trend.

Two of the three collisions reported at Primrose Road/Donnelly Avenue involved vehicles turning left from Donnelly Avenue. The other collision was attributed to a driver improperly executing a U-turn and colliding with

a parked vehicle. Installing a W4-4P "Cross Traffic Does Not Stop" sign below the stop sign on the Donnelly Avenue leg may lead to reduced left-turn collisions.

The two collisions reported at Lorton Avenue/Donnelly Avenue were drivers reversing either into objects or another parked car. The collision rate being higher than the state average is due in part to this being an intersection with relatively low daily volumes, increasing the average rate of collisions when measured per entering vehicle. The types of collisions that occurred do not correspond to any apparent issues with the intersection itself, therefore no specific remedial measures are recommended.

Eight of the 12 collisions reported at California Drive/Peninsula Avenue occurred between the hours of 1:00 p.m. and 6:30 p.m. Three of these eight involved speeding; increased enforcement during this time could help to reduce collisions due to speeding. There were also three collisions that involved southbound drivers failing to yield the right-of-way to oncoming northbound traffic when making a left turn onto Peninsula Avenue.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians in the vicinity of the proposed project site. The proposed project site is located in Downtown Burlingame, which has continuous sidewalks provided in the Downtown area and to surrounding residential neighborhoods.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the vicinity of the project site, Primrose Road, Chapin Avenue, and California Drive are designated Class III bicycle routes. Table 2 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *Bicycle and Pedestrian Plan*, City of Burlingame, 2019.

Table 2 – Bicycle Facility Summary				
Status **Facility**	**Class**	**Length (miles)**	**Begin Point**	**End Point**
Existing				
California Drive	III	1.10	Broadway	East Ln
Oak Grove Avenue	III	0.50	Acacia Dr	Winchester Dr
Floribunda Avenue*	III	0.35	Walnut Ave	Primrose Rd
Ansel Avenue	III	0.10	Oak Grove Ave	Floribunda Ave
Chapin Avenue	III	0.25	Occidental Ave	Primrose Dr
Primrose Road	III	0.40	Floribunda Ave	Howard Ave
North Ln	III	0.05	California Dr	East Ln
East Lane	III	0.15	North Ln	Howard Ave
Howard Avenue	III	0.60	Occidental Ave	East Ln
Highland Avenue	III	0.25	Howard Ave	Peninsula Ave
Planned				
California Drive	II	1.50	Broadway	Peninsula Ave
Chapin Avenue	II	0.15	El Camino Real	Primrose Rd
Howard Avenue	II	0.35	El Camino Real	East Ln
Primrose Road	III	0.10	Howard Ave	El Camino Real

Note: * A portion of this bike route is located within the Town of Hillsborough
Source: *Bicycle and Pedestrian Plan,* City of Burlingame, 2019

Transit Facilities

Regional and local, fixed-route bus transit service is provided by the San Mateo County Transit District via SamTrans. Routes near the project site provide direct service to Bay Area Rapid Transit (BART) stations and Caltrain stations, in addition to cities along the peninsula from Palo Alto to San Francisco. The nearest bus stops for Routes 46 and 292 are on California Drive between Lorton Avenue and North Lane, and the nearest bus stops for Routes 397, ECR, and ECR Rapid are at El Camino Real/Burlingame Avenue.

The City of Burlingame operates several shuttles, two of which have stops near the project site. The Burlingame Trolley circulates among the various shopping areas in the City of Burlingame and has stops in downtown Burlingame at Parking Lot J and the Caltrain station. The Red Carpet Trolley connects three hotels near the San Francisco International Airport to downtown Burlingame, with a stop at the Caltrain station.

Rail transit service between San Francisco and Gilroy via San Jose is provided by Caltrain. The Burlingame Caltrain station is located within a quarter mile of the project site and is serviced by both local and limited trains.

A summary of these transit routes is provided in Table 3.

Table 3 – Transit Routes

Transit Agency Route	Distance to Stop (mi)[1]	Service			Connections
		Days of Operation	Time	Frequency	
SamTrans					
Route 46	0.13	MWThF2 Tu2	7:41 AM, 3:25 PM, 3:27 PM 7:41 AM, 2:22 PM, 2:24 PM	3 trips daily	Burlingame, Burlingame Intermediate School
Route 292	0.13	Weekdays Weekends	3:55 AM – 2:40 AM 4:00 AM – 2:31 AM	30 min 30-60 min	Between San Francisco and San Mateo, via SFO Airport
Route 397	0.27	Daily	12:46 AM – 6:32 AM	60 min	Between San Francisco and Palo Alto, via SFO Airport and Millbrae Transit Center
ECR	0.27	Daily	3:53 AM – 2:00 AM	15-30 min	El Camino Real between Daly City BART and Palo Alto, via SFO Airport
ECR Rapid[3]	0.27	Weekdays Weekends	5:59 AM – 10:35 AM and 3:29 PM – 7:59 PM 9:30 AM – 7:49 PM	20-30 min 30 min	El Camino Real between Daly City BART and Redwood City
City of Burlingame					
Burlingame Trolley	0.15	Daily	11:50 AM – 9:45 PM	50 min	Broadway Shopping and hotels east of US 101
Red Carpet Trolley	0.15	Daily	11:27 AM – 9:24 PM	70 min	Millbrae Transit Center and hotels east of US 101
Caltrain					
Local and Limited	0.18	Weekdays	4:28 AM – 1:42 AM	20-60 min	Between San Francisco and Gilroy, via San Jose
		Saturdays	7:08 AM – 1:45 AM	90 min	Between San Francisco and San Jose
		Sundays	8:07 AM – 11:52 PM	90 min	Between San Francisco and San Jose

Notes: MWThF = Service on Mondays, Wednesday, Thursdays, and Fridays; Tu = Service on Tuesdays
[1] Defined as the shortest walking distance between the project site and the nearest stop
[2] Route 46 service provided on school days only
[3] ECR Rapid service temporarily suspended as of January 19, 2020 due to operator shortages

Two bicycles can be carried on most SamTrans buses. Bike rack space is on a first come, first served basis. Additional bicycles are allowed on SamTrans buses at the discretion of the driver. For Caltrain, each train has 72 or 80 bicycle positions in dedicated "bike cars," as well as bicycle parking at most stations.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. Redi-Wheels Paratransit is designed to serve the needs of individuals with disabilities within Burlingame and the greater Burlingame area. Trips can be scheduled for any day between 5:30 a.m. and 12:00 a.m.

Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The Levels of Service for the intersections with side street stop controls, or those which are unsignalized and have one or two approaches stop controlled, were analyzed using the "Two-Way Stop-Controlled" intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersections that are currently controlled by a traffic signal were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using signal timing obtained from the City of Burlingame and Caltrans.

The intersection that is currently controlled by a modern roundabout, California Drive/Lorton Avenue-Bellevue Avenue, was evaluated using the FHWA Roundabout Method, also contained within the Unsignalized Methodology of the HCM 6th Edition, Transportation Research Board, 2016. This methodology determines intersection operation using the gap acceptance method using basic geometric and volume data to calculate entering and circulating flows. This information is then translated to an overall average vehicle delay, with LOS break points at the same delays as used in the two-way stop-controlled methodology.

The ranges of delay associated with the various levels of service are indicated in Table 4.

Table 4 – Intersection Level of Service Criteria			
LOS	**Two-Way Stop-Controlled**	**Signalized**	**Roundabout**
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.	Delay of 0 to 10 seconds.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.	Delay of 10 to 15 seconds.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.	Delay of 15 to 25 seconds.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.	Delay of 25 to 35 seconds.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.	Delay of 35 to 50 seconds.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.	Delay of more than 50 seconds.

References: *Highway Capacity Manual,* Transportation Research Board, 2010; Highway *Capacity Manual 6th Edition,* Transportation Research Board, 2016

Traffic Operation Standards

Per the *Burlingame 2040 General Plan Draft Environmental Impact Report*, City of Burlingame, 2018, the threshold used to determine whether project-related impacts at signalized intersections would be considered adverse is if the additional traffic associated with the project would:

- Degrade the AM or PM peak hour from an acceptable LOS D (55 seconds/vehicle) or better under Existing or No Project Conditions to an unacceptable LOS E or worse under Project Conditions except when LOS E is determined by the City of Burlingame as acceptable due to costs of mitigation or when there would be other unacceptable impacts; or
- Degrade the AM or PM peak hour operating at LOS E or F under Existing or No Project Conditions by increasing the delay per vehicle by five (5) seconds or more.

The City of Burlingame does not define thresholds for significance at unsignalized intersections. However, previous traffic studies completed for projects in the City of Burlingame have stated that a project would have an adverse impact on traffic conditions at an unsignalized intersection with an unacceptable level of service (LOS E or LOS F) on any approach if the project adds at least 10 trips for any peak hour.

The project site is near El Camino Real (State Route 82), which is a corridor included in the *Congestion Management Program* (CMP), City/County Association of Governments, 2019. This corridor has an operational threshold of LOS E or better through the City of Burlingame.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected in May 2019 while local schools were in session.

Intersection Levels of Service

Under Existing Conditions, all intersections are operating acceptably at LOS C or better. The existing traffic volumes are shown in Figure 2. A summary of the intersection level of service calculations is contained in Table 5, and copies of the Level of Service calculations are provided in Appendix B.

Table 5 – Existing Peak Hour Intersection Levels of Service

Study Intersection *Approach*	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. California Dr/Broadway	23.5	C	25.5	C
2. El Camino Real/Chapin Ave	6.1	A	8.3	A
3. California Dr/Lorton Ave-Bellevue Ave	3.0	A	3.1	A
4. Primrose Rd/Donnelly Ave	2.3	-	4.3	-
Westbound Approach	*11.1*	*B*	*14.8*	*B*
5. Lorton Ave/Donnelly Ave	2.9	-	3.9	-
Eastbound Approach	*9.9*	*A*	*12.7*	*B*
6. El Camino Real/Burlingame Ave	4.8	A	6.1	A
7. California Dr/Burlingame Ave	9.0	A	10.7	B
8. California Dr/Peninsula Ave	8.4	A	9.2	A

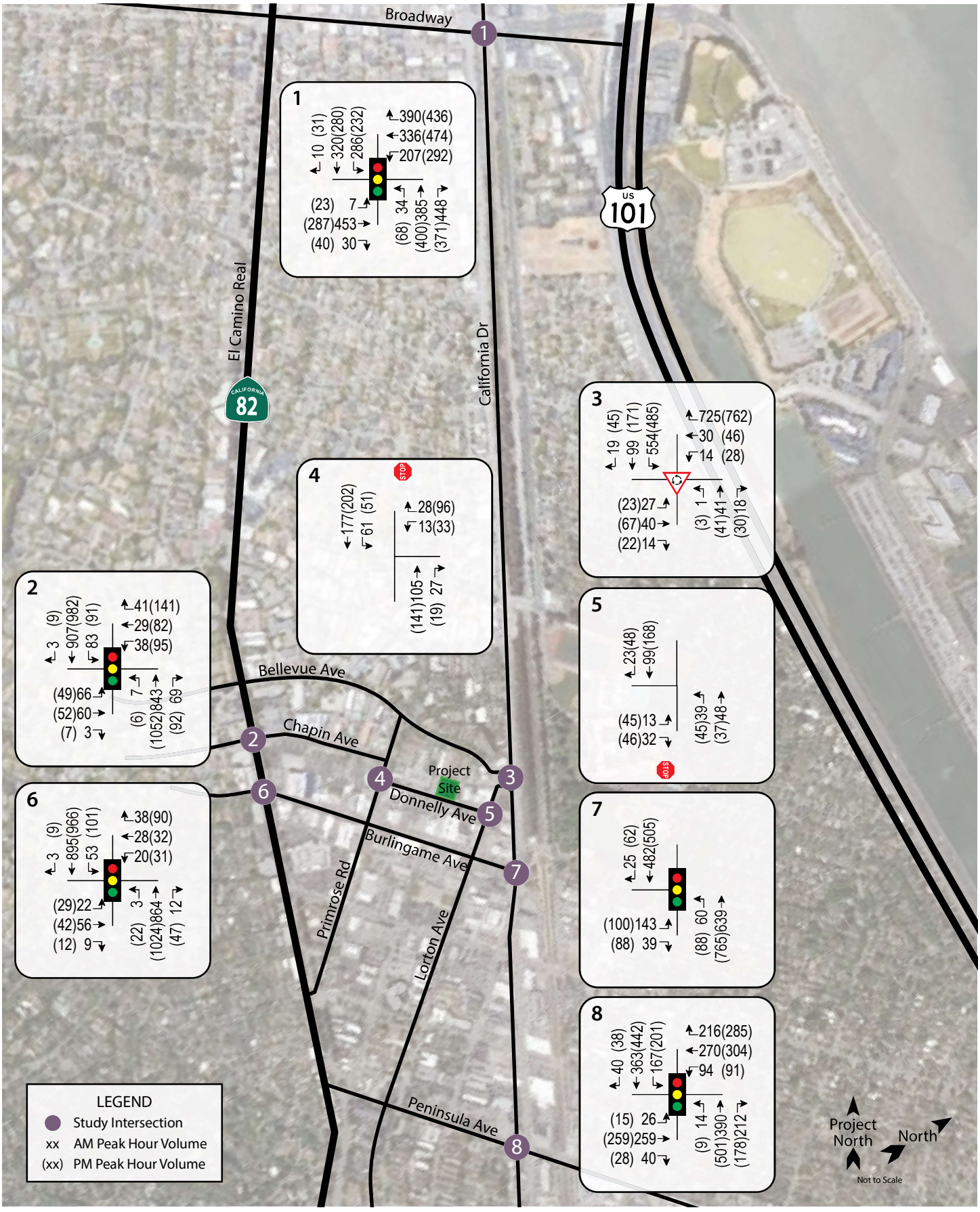
Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Near-Term Conditions

Near-Term volumes are intended to capture traffic conditions with the addition of traffic from approved and proposed projects. In addition to traffic from these projects, a five-year growth rate in traffic along key corridors was determined using the C/CAG 2040 Travel Forecast Model to account for background growth in traffic volumes.

Approved projects in the study area include the following:

- 1 and 45 Adrian Court – 265 apartments with 3,730 square feet of commercial and 25,000 square feet of open space;
- 300 Airport Boulevard – 767,000-square foot office campus;
- 1499 Bayshore Highway – 404-room hotel;
- 920 Bayswater Avenue – 128 apartments;



bur009.ai 6/19

1214 Donnelly Avenue IS/MND Transportation Analysis

Figure 2 – Existing Traffic Volumes

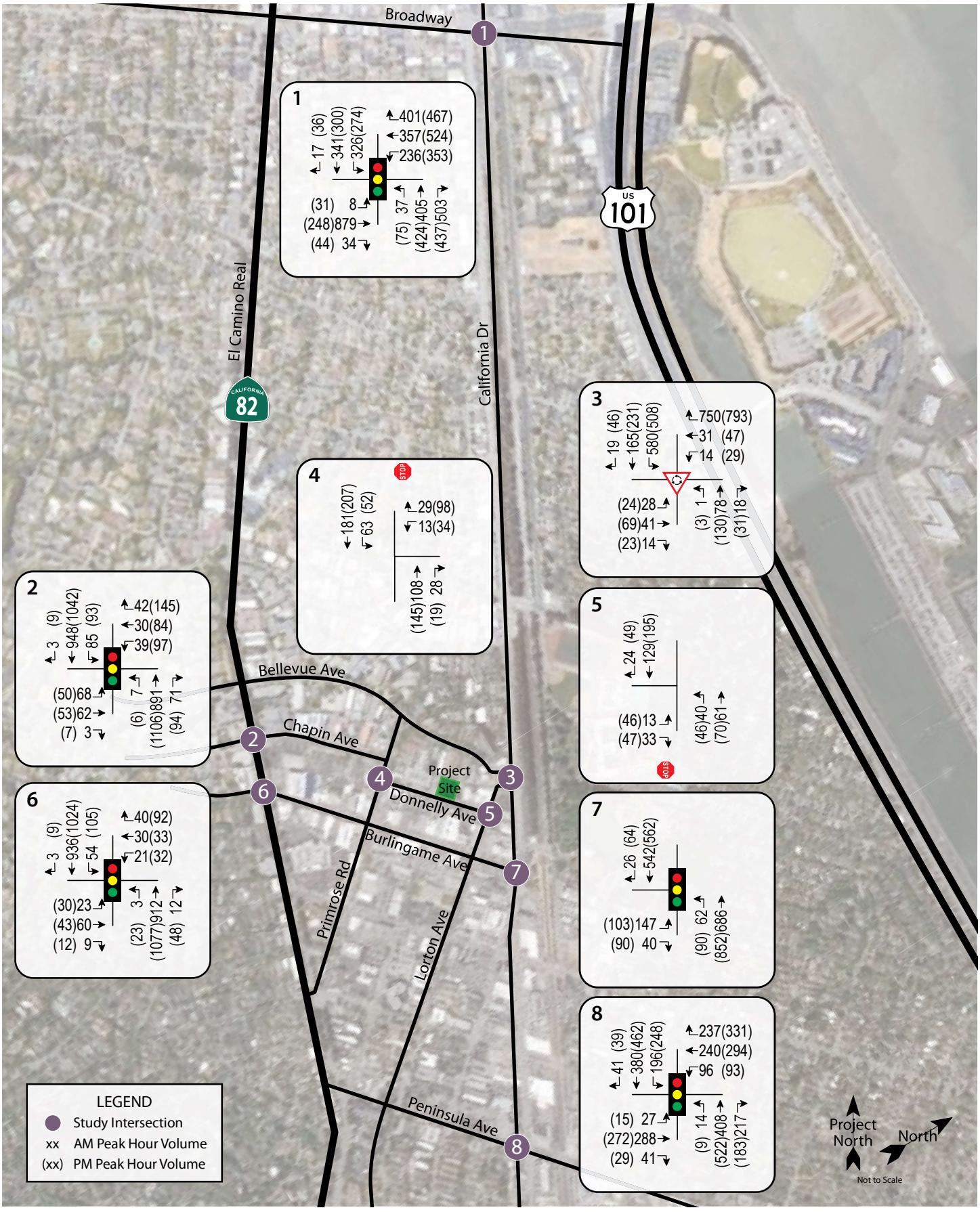
- 250 California Drive – 28,458-square foot office with 5,387 square feet of retail;
- 619-625 California Drive – 26-unit live/work building with 2,100 square feet of ground-floor retail;
- 1008-1028 Carolan Avenue – 268 apartments and 22 townhouses;
- 1128-1132 Douglas Avenue – 27 apartments;
- 1431 El Camino Real – 6 condominiums;
- 1509 El Camino Real – 11 condominiums;
- 1433 Floribunda Avenue – 8 condominiums;
- 1491-1493 Oak Grove Avenue – 10 condominiums;
- 21 Park Road – 7 condominiums; and
- Village at Burlingame – 132-unit housing with park and five story parking structure.

Proposed projects in the study area include the following:

- 250 Anza Boulevard – 13-acre TopGolf driving range;
- 1300 Bayshore Highway – 239,000-square foot office with 12,000-square foot restaurant and 8,600 square feet of retail;
- 509-511 California Drive; 24-unit live/work building;
- 556 El Camino Real – 21 condominiums;
- 1457 El Camino Real – 9 condominiums;
- 1766 El Camino Real – 155,645-square foot commercial/office space with 60 apartments;
- 1870 El Camino Real – 169 apartments;
- 128 Lorton Avenue – 19 condominiums;
- 1868 Ogden Drive – 120 apartments;
- 220 Park Road – 127 condominiums with 22,000-square feet of retail;
- 123-125 Primrose Road – 14 residential units with 1,139 square feet of retail; and
- 1095 Rollins Road – 150 apartments.

Near-Term operating conditions were determined with estimated traffic generated by the above projects and the five-year background growth added to the Existing volumes. There are no projects planned for the study area that would alter roadway capacity according to the *Burlingame 2040 General Plan*, the City's *Capital Improvement Projects* webpage, or the *Fiscal Year 2019-20 Budget*, such as roadway widening or intersection signalization. There are plans to grade-separate the Broadway rail crossing, with construction anticipated to begin in 2023. However, the project is not anticipated to be operational within the next five years. Therefore, the grade separation project is not included in near-term operating conditions.

With the Near-Term traffic added, the study intersections would operate similarly to that reported for Existing volumes, at an acceptable LOS D or better. These results are summarized in Table 6 and Near-Term volumes are shown in Figure 3.



bur009.ai 12/19

1214 Donnelly Avenue IS/MND Transportation Analysis

Figure 3 – Near-Term Traffic Volumes

Table 6 – Near-Term Peak Hour Intersection Levels of Service					
Study Intersection *Approach*		**AM Peak**		**PM Peak**	
		Delay	**LOS**	**Delay**	**LOS**
1.	California Dr/Broadway	38.8	D	36.5	D
2.	El Camino Real/Chapin Ave	6.1	A	8.4	A
3.	California Dr/Lorton Ave-Bellevue Ave	3.5	A	3.7	A
4.	Primrose Rd/Donnelly Ave	2.3	-	4.4	-
	Westbound Approach	*11.2*	*B*	*15.1*	*C*
5.	Lorton Ave/Donnelly Ave	2.6	-	3.6	-
	Eastbound Approach	*10.2*	*B*	*13.6*	*B*
6.	El Camino Real/Burlingame Ave	5.0	A	6.3	A
7.	California Dr/Burlingame Ave	9.3	A	11.0	B
8.	California Dr/Peninsula Ave	9.4	A	10.7	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

It is noted that under Near-Term Conditions, both the a.m. and p.m. peak delays at Primrose Road/Donnelly Avenue increase for the westbound approach but decrease for the overall intersection. This is because the traffic that would be added by nearby approved and pending projects would predominately travel through the intersection northbound and southbound on Primrose Road. These movements are typically assessed as having no delay as they have priority over all other movements except pedestrians crossing in the crosswalk. This means that even though approaching traffic on Donnelly Avenue may experience higher delays, the overall intersection average decreases due to the increase in traffic on Primrose Road that does not experience delay.

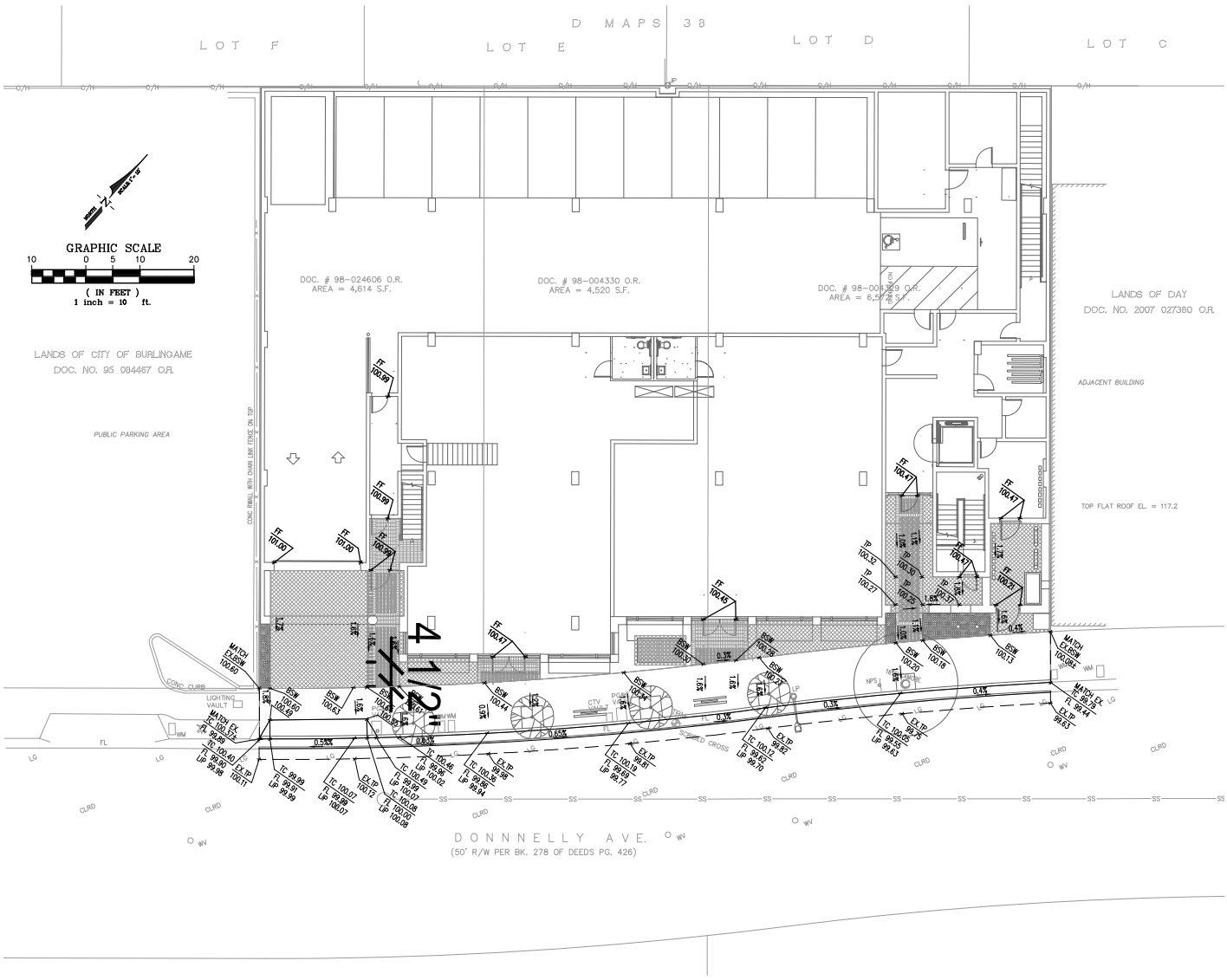
Project Description

The proposed project includes 14 condominium units and 4,704 square feet of commercial retail space at 1214 Donnelly Avenue in Downtown Burlingame. This project would replace the existing four single-family housing units on the site, as well as the adjacent vacant lots that formerly contained residential and office uses. An incorporated parking garage is proposed that would provide 23 spaces, including 21 residential spaces using a puzzle stacker system, one accessible space, and one space for commercial services or deliveries. Lift-assist bicycle racks would be provided in a secured room with capacity for eight bicycles. The proposed project site plan is shown in Figure 4.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017. The trips to be deducted for existing uses at the site were developed using the published standard rates for "Single Family Detached Housing" (ITE LU 210). For the proposed use, the residential component was developed using the land use "Multifamily Housing (Low-Rise)" (ITE LU 220), and the commercial component using "Shopping Center" (ITE LU 820).

The expected trip generation potential for the proposed project is indicated in Table 7, with deductions taken for trips made to and from the existing housing at the site, which would cease with the construction of the project. The proposed project is expected to generate an average of 280 trips per day, including ten trips during the a.m.



Source: Gary Gee Architects, 6/17 bur009.ai 12/19

1214 Donnelly Avenue IS/MND Transportation Analysis

Figure 4 – Site Plan

peak hour and 26 during the p.m. peak hour. After deductions are taken into account for the existing land use, the project would be expected to generate 242 new trips on a daily basis, including seven during the morning peak hour and 22 during the evening peak hour; these new trips represent the increase in traffic associated with the project compared to existing volumes.

Table 7 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Existing											
Single-Family Units	-4 du	9.44	-38	0.74	-3	-1	-2	0.99	-4	-2	-2
Proposed											
Condominiums	14 du	7.32	102	0.46	6	1	5	0.56	8	5	3
Commercial Retail	4.704 ksf	37.75	178	0.94	4	3	1	3.81	18	9	9
Total			**242**		**7**	**3**	**4**		**22**	**12**	**10**

Note: du = dwelling unit; ksf = 1,000 square feet

Trip Distribution

The pattern used to allocate new project trips to the street network was determined by reviewing employment patterns for residents of Downtown Burlingame as indicated by the 2017 American Community Survey, as well as a literature review of the distributions used by similar projects in Burlingame. The applied assumptions and resulting trips are shown in Table 8.

Table 8 – Trip Distribution Assumptions

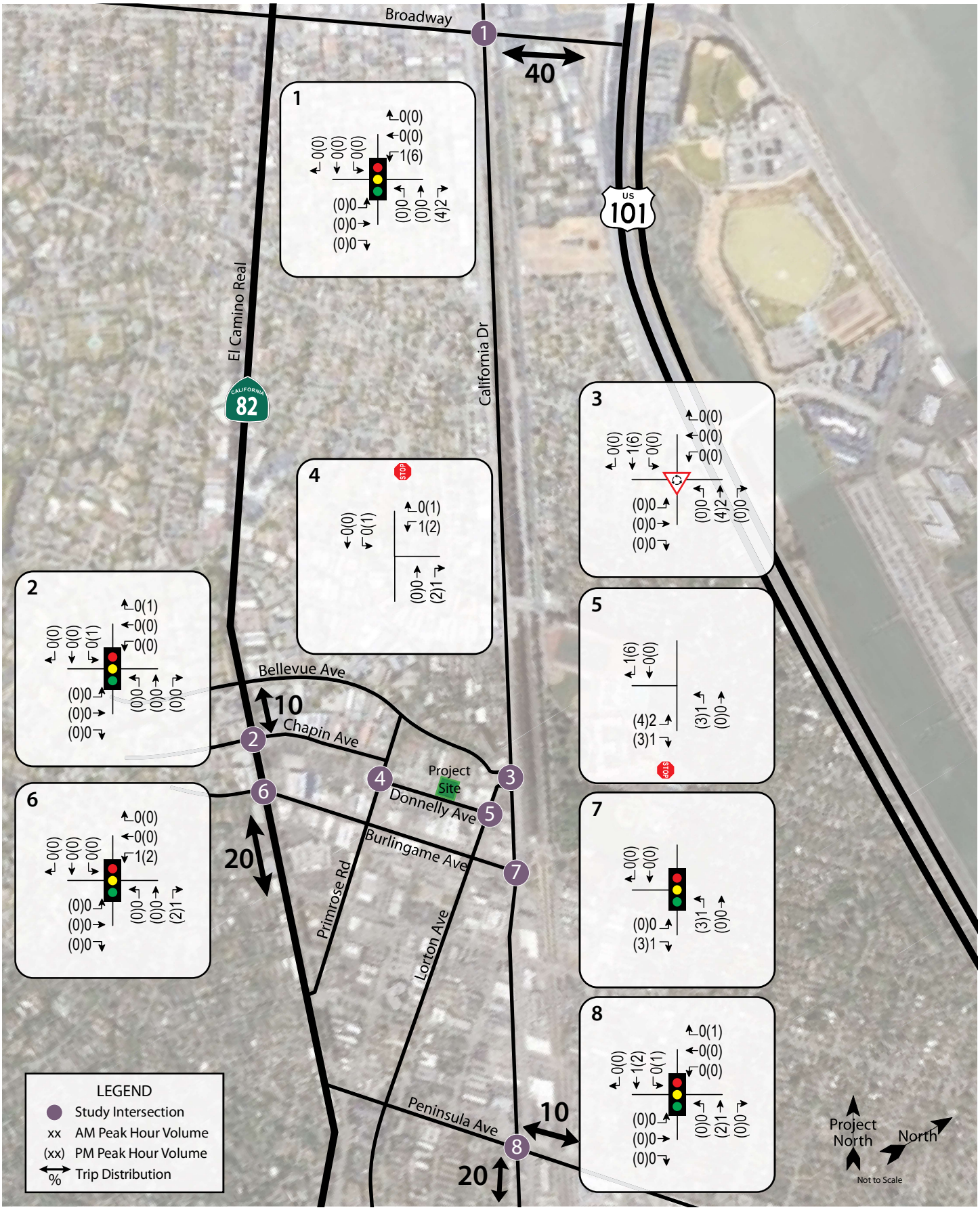
Gateway	Percent	Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
Broadway to/from the east of California Dr	40%	98	3	10
El Camino Real to/from the north of Chapin Avenue	10%	24	0	2
El Camino Real to/from the south of Burlingame Ave	20%	48	2	4
California Drive to/from the south of Peninsula Ave	20%	48	2	4
Peninsula Avenue to/from the east of California Dr	10%	24	0	2
TOTAL	**100**	**242**	**7**	**22**

With the trip distribution applied to the trip generation, the intersection turning movement volumes that would be generated by the proposed project were calculated and are shown in Figure 5.

Intersection Operation

Near-Term plus Project Conditions

With project-related traffic added to Near-Term volumes, the study intersections are expected to operate acceptably. These results are summarized in Table 9, and volumes are shown in Figure 6.

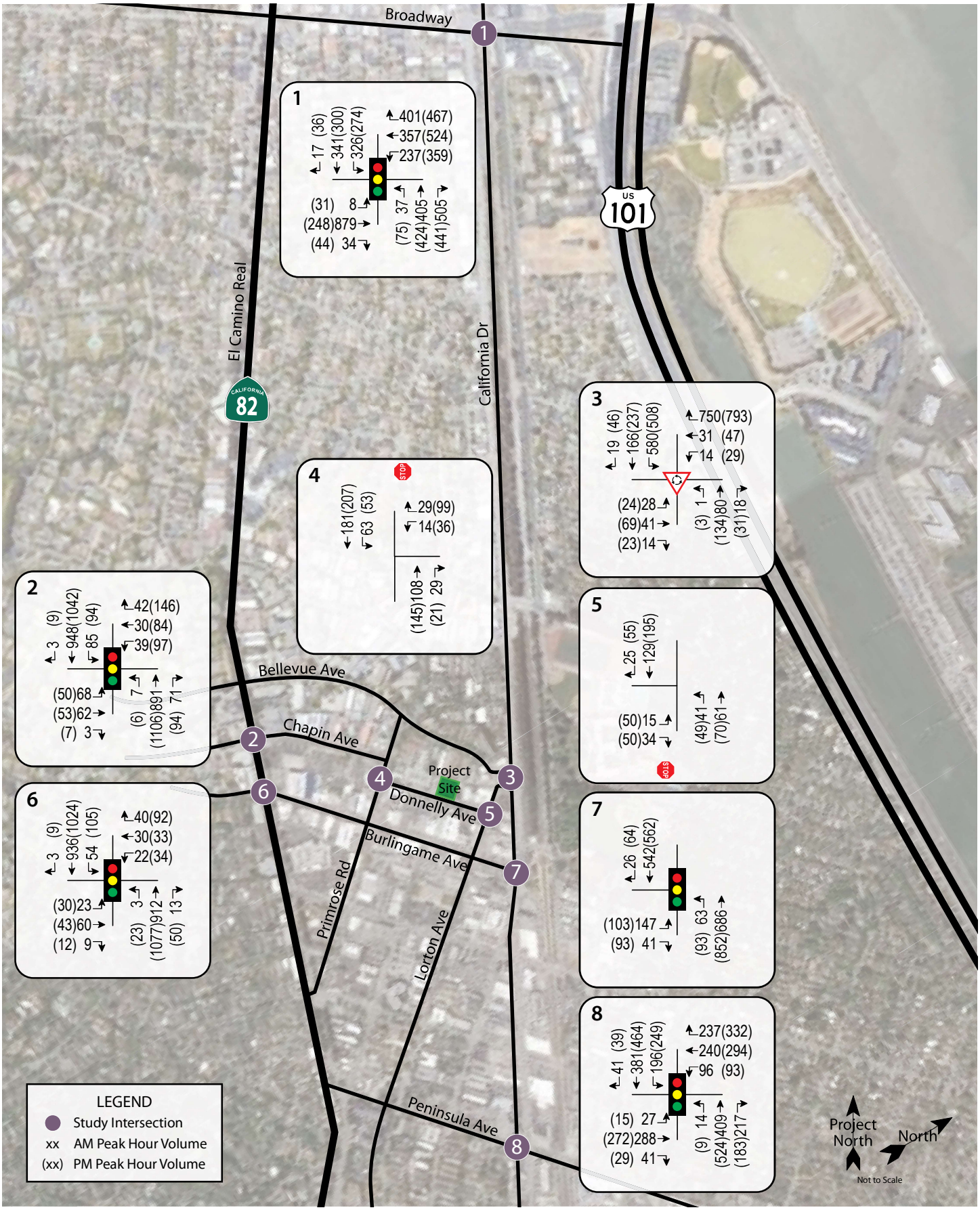


bur009.ai 12/19

1214 Donnelly Avenue IS/MND Transportation Analysis

Figure 5 – Project Traffic Volumes

W-Trans



bur009.ai 12/19

1214 Donnelly Avenue IS/MND Transportation Analysis

Figure 6 – Near-Term plus Project Traffic Volumes

Table 9 – Near-Term and Near-Term plus Project Peak Hour Intersection Levels of Service

	Study Intersection *Approach*	Near-Term Conditions				Near-Term plus Project			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.	California Dr/Broadway	38.8	D	36.5	D	39.0	D	37.9	D
2.	El Camino Real/Chapin Ave	6.1	A	8.4	A	6.1	A	8.4	A
3.	California Dr/Lorton Ave-Bellevue Ave	3.5	A	3.7	A	3.5	A	3.7	A
4.	Primrose Rd/Donnelly Ave	2.3	-	4.4	-	2.3	-	4.5	-
	Westbound Approach	*11.2*	*B*	*15.1*	*C*	*11.2*	*B*	*15.4*	*C*
5.	Lorton Ave/Donnelly Ave	2.6	-	3.6	-	2.7	-	3.8	-
	Eastbound Approach	*10.2*	*B*	*13.6*	*B*	*10.3*	*B*	*13.9*	*B*
6.	El Camino Real/Burlingame Ave	5.0	A	6.3	A	5.0	A	6.3	A
7.	California Dr/Burlingame Ave	9.3	A	11.0	B	9.4	A	11.0	B
8.	California Dr/Peninsula Ave	9.4	A	10.7	B	9.4	A	10.7	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Finding – The study intersections are expected to continue operating acceptably at the same levels of service upon the addition of project-generated traffic to Near-Term volumes.

Vehicle Miles Traveled

An evaluation of vehicle miles travelled (VMT) is not a requirement contained in either the City of Burlingame or C/CAG guidelines but is provided for informational purposes as lead agencies work to adopt revised transportation significance criteria in alignment with the *Final Adopted Text for Revisions to the CEQA Guidelines*, Office of Planning and Research (OPR), December 2018. Specifically, Section 15064.3, "Determining the Significance of Transportation Impacts," which states that for land use projects the "vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact." The proposed project is located within one quarter mile of the Burlingame Caltrain Station and within one half mile of the high frequency El Camino Real transit corridor. Based on the *Final Adopted Text*, this project would therefore be presumed to have a less-than-significant impact on VMT.

Regardless, an informational VMT analysis has been prepared for the proposed project. Since the City of Burlingame has not yet adopted an applicable threshold of significance regarding VMT analysis, the recommended thresholds of significance from the OPR *Technical Advisory on Evaluating Transportation Impact in CEQA*, November 2017 have been applied to this study.

Residential Use

For the residential use, four pieces of data are required to estimate the VMT per capita: the total number of daily vehicle trips anticipated to be generated by the project, the average length of those trips, the occupancy per condominium, and the condominium count for the proposed project. The daily trip generation estimate developed as part of this study is 102 trips for the residential use. The average trip length is 5.26 miles per trip, as collected from Table 4.3 "Trip Type Information" from Appendix A of the *Burlingame 2040 General Plan Draft Environmental Impact Report* (DEIR). An estimate for the average condominium occupancy (2.86 persons per unit) was developed using the estimated total number of residents living in condominiums (1,470 persons) and the total number of condominiums (514 units) from the Existing Conditions scenario of the General Plan, from Appendix A of the DEIR. The condominium count for the proposed project is 14 units. The following data and calculations were used to develop the estimated VMT per capita:

- Daily residential trip generation: 102 trips
- Average trip length: 5.26 miles per trip
- Total VMT: 102 trips * 5.26 miles per trip = 537 miles
- Average occupancy: 2.86 persons per unit
- Proposed number of condominiums: 14 units
- Estimated project population: 2.86 persons per unit * 14 units = 40 persons
- VMT per capita: 537 miles / 40 persons = 13.43 VMT per capita

The estimated VMT per capita for the proposed project, without taking into consideration travel demand management strategies or proximity to transit, is 13.43 VMT per capita. The significance threshold recommended by OPR states: "A proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita." The existing VMT per capita for the City of Burlingame was published in Appendix D of the *Burlingame General Plan TIA Hexagon Supporting Analysis and Data,* Hexagon Transportation Consultants, 2018. This study estimated the existing VMT per capita in Burlingame as 8.18 miles. The proposed project exceeds a level of 15 percent below the existing VMT per capita. However, as noted above, the proximity to high-quality transit service would be presumed to result in a less-than-significant impact on VMT.

Commercial Use

For the commercial use, OPR recommends that the change in VMT be considered less than significant if the proposed retail is smaller, centrally located, and local-serving. The OPR report generalizes that projects larger than 50,000 square feet would be considered regional destinations and thus likely to increase VMT. As this project is considerably less than 50,000 square feet and centrally located in Downtown Burlingame, it is considered unlikely that the commercial use would increase VMT and is therefore presumed to result in a less-than-significant impact.

Access and Circulation

Site Access

Pedestrian access is provided along the project site's frontage on Donnelly Avenue for the commercial use, and on the southeast corner of the site for the residential use. , There is a proposed driveway for vehicular access into the residential parking garage that would be located on the southwest corner of the project site's frontage, approximately 400 feet east of Primrose Road/Donnelly Avenue and 320 feet west of Lorton Avenue/Donnelly Avenue.

Sight Distance

A substantially clear line of sight should be maintained between the driver of a vehicle waiting at a driveway and the driver of an approaching vehicle. Sight distances along Donnelly Avenue from the project driveway were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance for driveway approaches is based on stopping sight distance using the approach travel speed as the basis for determining the recommended sight distance. Although there is no posted speed limit on Donnelly Avenue, the prima facie speed limit for a commercial or residential district is 25 miles per hour per the *California Vehicle Code*, State of California, 2018. This equates a minimum stopping sight distance of 150 feet.

Finding – A review in the field shows that that sight distances at the project driveway are expected to be adequate, as sight lines were verified from the location of the proposed driveway to each end of Donnelly Avenue, well in excess of the required 150 feet. Additionally, parking is prohibited on the north side of Donnelly Avenue including in front of the project site, preventing parked vehicles from restricting sight distance. The site plan provided shows the addition of trees between the sidewalk and roadway, which should be selected and implemented to minimize blocking the view of drivers leaving the project driveway or driveways of the adjacent properties. The Federal Highway Administration recommends in its guide on *Vegetation Control for Safety*, 2007, that bushes and shrubs be kept under three feet of height, and that trees and hanging branches be trimmed to a minimum height of seven feet.

Recommendation – The trees selected for installation between the sidewalk in front of the project site and Donnelly Avenue should be of a type and maturity such that hanging branches are kept above seven feet from the ground and they need to be maintained as such. If vegetation is to be installed along with these trees, the vegetation should be kept to a maximum height of three feet.

Parking

Vehicle Parking

The project was analyzed to determine whether the proposed parking supply would be sufficient to accommodate the anticipated parking demand. The project site as proposed would provide a total of 22 off-street parking spaces for the residential use, one stall for delivery vehicles, and no parking capacity for the commercial use.

The jurisdictional parking supply requirements are based on the *City of Burlingame Downtown Specific Plan*, Table 3-3; Parking Standards. Additionally, the *Burlingame Municipal Code*, City of Burlingame, 2019, section 26.30.070(3) states that "all residential condominium developments shall provide an area for on-site deliveries." It is noted that ground-floor commercial retail land uses are not required to provided parking within the Parking Sector area, which includes Donnelly Avenue and the proposed project site. The proposed parking supply and City of Burlingame requirements are shown in Table 10.

Table 10 – Parking Analysis Summary

Land Use	Units	Supply (spaces)	Burlingame Requirements	
			Rate	Spaces Required
One Bedroom Unit	2 du	22	1	2
Two Bedroom Unit	12 du		1.5	18
Service/Delivery Area	LS	1	1	1
Total	**14 du**	**23**		**21**

Notes: du = dwelling unit; LS = lump sum

The site plan shows that out of the 23 spaces proposed for residential use, there would be one van accessible stall, which is the minimum number required for a lot with 23 spaces, per the *2010 ADA Standards for Accessible Design*, US Department of Justice, September 2010.

Finding – The proposed parking supply of 23 spaces would exceed the City's parking requirement of 21 spaces. The proposed van accessible stall fulfills the requirement for one such stall.

Bicycle Parking

In addition to vehicle parking, the project site plan delineates four sidewalk bicycle rack spaces available to the public, eight interior enclosed lift-assist rack spaces for residents, and one bicycle locker for the retail tenants.

The *California Green Building Code Checklist for New Nonresidential Buildings*, City of Burlingame, 2016, specifies parking requirements for nonresidential buildings. For short-term bicycle parking, one permanently anchored bicycle rack space must be provided for every 20 motorized vehicle spots constructed, with a minimum of two spaces and an exemption for projects with fewer than ten motorized vehicle spaces. For long-term bicycle parking, one secured bicycle parking space (such as a bicycle locker) must be provided for every 20 motorized vehicle spots constructed, with a minimum of one space required and an exemption for buildings with fewer than 10 tenant-occupants. It is noted that the proposed project fulfills both exemptions, as no new vehicle spaces are to be constructed for the retail use and the site plan shows capacity for one or two tenants.

Although residential bicycle parking is not required, the proposed site plan outlines two voluntary measures: one short-term space per 20 new visitor motorized vehicle parking spaces with a minimum of one rack with space for two bicycles, and one long-term space per two dwelling units.

Both the voluntary and mandatory bicycle parking standards are outlined in Table 11, along with the proposed bicycle parking supply from the site plan.

Table 11 – Bicycle Parking Analysis Summary

Land Use	Units	Supply (spaces)		Burlingame Requirements			
				Short-Term		Long-Term	
		Short-Term	Long-Term	Rate	Spaces Required	Rate	Spaces Required
Commercial Vehicle Parking	0 spaces	2	1	0.05	0[1]	0.05	0[2]
Residential Vehicle Parking	0 spaces	2	-	0.05[3]	2	-	-
Residential Condominiums	14 du	-	8	-	-	0.5[3]	7
Total		**4**	**9**		**2**		**7**

Note: du = dwelling unit

[1] Commercial projects with fewer than 10 vehicle spaces are exempt from short-term bicycle parking requirements

[2] Commercial projects with fewer than 10 tenant-occupants are exempt from long-term bicycle parking requirements

[3] These rates are voluntary as residential bicycle parking is not required

Finding – Four short-term spaces are proposed versus a voluntary measure requiring two and a mandatory requirement of zero. Nine long-term spaces are proposed as compared to the voluntary measure requiring seven and a mandatory requirement of zero. Therefore, the proposed supply is greater than the required supply and also greater than the voluntary measures adopted.

CEQA Initial Study Checklist

This section provides a discussion to support the California Environmental Quality Act (CEQA) Initial Study checklist for potential transportation/traffic impacts, as shown in Table 12.

Table 12 – CEQA Initial Study Checklist

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Would the project:

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

According to the *Burlingame Draft General Plan*, MIG, January 2019, numerous objectives, policies and programs have been established supporting the need for all modes of travel to be accommodated by the transportation system. This is demonstrated through General Plan Goals M1- through M-15, as follows:

- **Goal M-1:** Achieve and maintain a citywide circulation network that provides safe, efficient, and convenient mobility for all users and modes of transit.
- **Goal M-2:** Ensure Burlingame's streets are comfortable, safe and attractive for people of all ages and abilities to walk.
- **Goal M-3:** Develop a network of high-quality, convenient, safe and easy-to-use bicycle facilities to increase the number of people who use bicycles for everyday transportation.
- **Goal M-4:** Improve transit access, frequency, connectivity, and amenities to increase transit ridership and convenience.
- **Goal M-5:** Implement TDM strategies that reduce overall vehicle trips and encourage the use of transportation modes that reduce VMT and greenhouse gas emissions.
- **Goal M-6:** Create an integrated transportation program that reduces peak-period vehicle trips and vehicle miles traveled.
- **Goal M-7:** Use parking management strategies that promote parking availability, housing affordability, congestion management, and improved air quality.
- **Goal M-8:** Achieve air quality, sustainability, and greenhouse gas emission reduction objectives through technology upgrades and improved management of Burlingame's streets.
- **Goal M-9:** Achieve an improved paradigm for measuring the traffic impacts of development projects.
- **Goal M-10:** California Drive will be redesigned to support multimodal access, with facilities that encourage active transportation and improved linkages to commercial and residential areas.

- **Goal M-11:** Ensure that El Camino Real retains its distinct character as a residential street lines with a historic tree grove, with its function as a regional commute corridor secondary to Burlingame's vision of the corridor as a lower-speed tree-lined thoroughfare.
- **Goal M-12:** Allow Broadway to function for dual purposes: as a slow-speed roadway through the Broadway commercial district and as a connector to Highway 101.
- **Goal M-13:** Ensure that Rollins Road meets the needs of all users within the Rollins Road District.
- **Goal M-14:** Reinvent Old Bayshore Highway and Airport Boulevard as multimodal streets, and enhance connections between the Bayfront and the balance of the City.
- **Goal M-15:** Ensure that neighborhood streets are safe and provide efficient vehicular access to residential neighborhoods and schools.

Each of these goals is followed by discussion and specific policies outlining implementation.

Roadway Facilities

The proposed project would result in the intensification of a developed parcel and two previously developed parcels. This intensification would result in seven net new a.m. trips and 22 net new p.m. trips, while degrading study intersection operations by 1.4 seconds or less. Therefore, impacts to roadway facilities would be *less than significant*, and no mitigation measures are required.

Pedestrian Facilities

The proposed project includes widening the existing sidewalk and providing several access points from the sidewalk. Additionally, trees are proposed to be planted between the sidewalk and roadway, providing shade and separation for pedestrians from the roadway. Therefore, impacts to pedestrian facilities would be *less than significant*, and no mitigation measures are required.

Bicycle Facilities

On the project site, bicycle parking is proposed including the addition of publicly available bicycle parking spaces and private enclosed bicycle parking spaces. There are no proposed changes to roadway bicycle facilities. Therefore, impacts to bicycle facilities would be *less than significant*, and no mitigation measures are required.

Transit Facilities

The proposed project would primarily involve off-street improvements, along with some frontage modifications on Donnelly Avenue. As there are no fixed routes serving Donnelly Avenue, transit impacts would be *less than significant*, and no mitigation measures are required.

b) Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?

CEQA Guidelines § 15064.3, subdivision (b) indicates that land use projects would have a significant impact if the project resulted in vehicle miles traveled (VMT) exceeding an applicable threshold of significance. It further notes that if existing models or methods are not available to estimate the vehicle miles traveled for the project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively.

The project site is located within a quarter mile of the Burlingame Caltrain Station and within a half mile of El Camino Real, which has frequent transit service. Due to the proximity of rail and high frequency transit, the project would have a *less-than-significant* impact on vehicle miles traveled.

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

The project would reconstruct an existing driveway and modify the sidewalk and curb to eliminate several other driveways. Aside from this, there are no proposed changes to vehicle infrastructure. Any site improvements would need to be built to current design standards. Therefore, there would be a *less-than-significant* impact caused by the project related to an increase in hazards due to design features.

The project proposes a mixture of residential and commercial uses. As the surrounding area already contains both land use types, there would be a *less-than-significant* impact with regard to incompatible uses.

d) Would the project result in inadequate emergency access?

Emergency access would be provided via Donnelly Avenue. The project would not impact emergency access on Donnelly Avenue or nearby streets, and therefore would result in a *less-than-significant* impact related to emergency access.

Conclusions and Recommendations

Conclusions

- With 14 condominium units and 4,704 square feet of retail replacing four housing units, the project is anticipated to generate an average of 242 net new daily trips, including seven during the a.m. peak hour and 22 during the p.m. peak hour.

- Eight intersections were studied, all of which are currently operating acceptably. The study intersections are also expected to operate acceptably under Near-Term volumes, which include potential traffic from nearby proposed and approved projects along with a universal growth factor applied to the Existing volumes.

- The eight intersections would be expected to continue to operate acceptably with the addition of project traffic to Near-Term volumes.

- A quantitative assessment of vehicle miles traveled (VMT) indicates that the project would contribute 13.43 VMT per capita, compared to a citywide average of 8.18 VMT per capita. However, the residential land use would likely result in a less-than-significant impact due to proximity to high-quality transit. The commercial land use would likely result in a less-than-significant impact due to the small square footage proposed and the project site's location in Downtown Burlingame.

- The sight distance from the proposed project driveway location was assessed, and it was determined that adequate sight lines are available to drivers leaving the driveway location although there is potential for project foliage to obstruct these sight lines.

- Per the project site plan, 23 parking spaces are proposed to be included, surpassing the City's requirement for 21 parking spaces. One of these parking spaces would be designated as a van accessible stall, fulfilling the requirement for one such space.

- Due to the project land use types and applicable exemptions, there are no bicycle parking spaces required. However, the project would include four short-term bicycle parking spaces in two sidewalk racks, in addition to an inside bicycle locker for the commercial tenant and eight secured inside lift-assist rack spaces for the residents.

- A CEQA Initial Study checklist was completed to assess potential transportation/traffic impacts. The proposed project is expected to have a less-than-significant impact under all four checklist items.

Recommendations

- Any vegetation installed should be of a type and maturity such that sight lines between three to seven feet above the ground are maintained and minimally obstructed. After installation, the vegetation should be maintained to keep this gap clear.

Study Participants and References

Study Participants

Principal in Charge	Mark E. Spencer, TE
Associate Engineer	Kevin Carstens, PE
Assistant Engineer	Allison Woodworth, EIT
Graphics	Katia Wolfe
Editing/Formatting	Hannah Yung-Boxdell
Quality Control	Dalene J. Whitlock, PE, PTOE

References

2010 ADA Standards for Accessible Design, US Department of Justice, September 2010
2016 Collision Data on California State Highways, California Department of Transportation, 2018
Bicycle and Pedestrian Plan, City of Burlingame, 2019
Burlingame 2040 General Plan Draft Environmental Impact Report, City of Burlingame, 2018
Burlingame 2040 General Plan TIA Hexagon Supporting Analysis and Data, Hexagon Transportation Consultants, 2018
Burlingame Draft General Plan, MIG, January 2019
Burlingame Municipal Code, Quality Code Publishing, 2019
California Green Building Code Checklist for New Nonresidential Buildings, City of Burlingame, 2016
California Vehicle Code, State of California, 2018, http://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=VEH&tocTitle=+Vehicle+Code+-+VEH
Caltrain, http://www.caltrain.com/schedules.html
Capital Improvement Projects, City of Burlingame, https://www.burlingame.org/departments/public_works/capital_improvement_projects.php
City of Burlingame Downtown Specific Plan, City of Burlingame, 2011
Congestion Management Program, City/County Association of Governments, 2019
County of San Mateo Traffic Impact Study Requirements, County of San Mateo, 2013
Final Adopted Text for Revisions to the CEQA Guidelines, Office of Planning and Research, December 2018
Fiscal Year 2019-20 Budget, City of Burlingame, 2019
Highway Capacity Manual, Transportation Research Board, 2010
Highway Capacity Manual, 6th Edition, Transportation Research Board, 2016
Highway Design Manual, 6th Edition, California Department of Transportation, 2017
Public Transportation, City of Burlingame, https://www.burlingame.org/residents/traffic_and_transportation/public_transportation.php
SamTrans, http://www.samtrans.com/
Statewide Integrated Traffic Records System (SWITRS), California Highway Patrol, 2014-2019
Technical Advisory on Evaluating Transportation Impact in CEQA, Office of Planning and Research, November 2017
Trip Generation Manual, 10th Edition, Institute of Transportation Engineers, 2017
Vegetation Control for Safety, Federal Highway Administration, 2007

BUR009

Appendix A

Collision Rate Calculations

This page intentionally left blank

Intersection Collision Rate Calculations

1214 Donnelly Avenue IS/MND Transportation Analysis

Intersection # 1: Broadway & California Dr.
Date of Count: Tuesday, May 14, 2019

Number of Collisions: 19
Number of Injuries: 9
Number of Fatalities: 0
ADT: 29300
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Signals
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{19 \times 1{,}000{,}000}{29{,}300 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.36 c/mve**	**0.0%**	**47.4%**
Statewide Average*	**0.24 c/mve**	**0.5%**	**44.6%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 2: El Camino Real & Chapin Ave
Date of Count: Tuesday, May 14, 2019

Number of Collisions: 12
Number of Injuries: 9
Number of Fatalities: 0
ADT: 26600
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Signals
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{12 \times 1{,}000{,}000}{26{,}600 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.25 c/mve**	**0.0%**	**75.0%**
Statewide Average*	**0.24 c/mve**	**0.5%**	**44.6%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

1214 Donnelly Avenue IS/MND Transportation Analysis

Intersection # 3: California Dr & Bellevue Ave. & Lorton Ave.
Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: Stop & Yield Controls
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.22 c/mve**	**1.0%**	**34.6%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 4: Primrose Rd & Donnelly Ave
Date of Count: Tuesday, May 14, 2019

Number of Collisions: 3
Number of Injuries: 1
Number of Fatalities: 0
ADT: 5400
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{3 \times 1{,}000{,}000}{5{,}400 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.30 c/mve**	**0.0%**	**33.3%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

1214 Donnelly Avenue IS/MND Transportation Analysis

Intersection # 5: Lorton Ave & Donnelly Ave

Date of Count: Tuesday, May 14, 2019

Number of Collisions: 2
Number of Injuries: 0
Number of Fatalities: 0
ADT: 3900
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{2 \times 1{,}000{,}000}{3{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.28 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 6: El Camino Real & Burlingame Ave

Date of Count: Tuesday, May 14, 2019

Number of Collisions: 17
Number of Injuries: 11
Number of Fatalities: 0
ADT: 45100
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Signals
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{17 \times 1{,}000{,}000}{45{,}100 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.21 c/mve**	**0.0%**	**64.7%**
Statewide Average*	**0.24 c/mve**	**0.5%**	**44.6%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

1214 Donnelly Avenue IS/MND Transportation Analysis

Intersection # 7: California Dr & Burlingame Ave

Date of Count: Tuesday, May 14, 2019

Number of Collisions: 6
Number of Injuries: 3
Number of Fatalities: 0
ADT: 16100
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Signals
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{6 \times 1{,}000{,}000}{16{,}100 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.20 c/mve**	**0.0%**	**50.0%**
Statewide Average*	**0.19 c/mve**	**0.4%**	**46.8%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 8: California Dr & Peninsula Ave

Date of Count: Tuesday, May 14, 2019

Number of Collisions: 12
Number of Injuries: 10
Number of Fatalities: 0
ADT: 23500
Start Date: April 1, 2014
End Date: March 31, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Signals
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{12 \times 1{,}000{,}000}{23{,}500 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.28 c/mve**	**0.0%**	**83.3%**
Statewide Average*	**0.24 c/mve**	**0.5%**	**44.6%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Appendix B

Intersection Level of Service Calculations

This page intentionally left blank

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	453	30	207	336	390	34	385	448	286	320	10
Future Volume (veh/h)	7	453	30	207	336	390	34	385	448	286	320	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.94	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	8	515	27	235	382	0	39	438	0	325	364	11
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	891	47	281	903	767	84	703	315	452	491	15
Arrive On Green	0.26	0.26	0.26	0.16	0.48	0.00	0.05	0.20	0.00	0.13	0.27	0.27
Sat Flow, veh/h	988	3408	178	1774	1863	1583	1774	3539	1583	3442	1796	54
Grp Volume(v), veh/h	8	267	275	235	382	0	39	438	0	325	0	375
Grp Sat Flow(s),veh/h/ln	988	1770	1817	1774	1863	1583	1774	1770	1583	1721	0	1850
Q Serve(g_s), s	0.4	8.3	8.3	8.1	8.4	0.0	1.4	7.1	0.0	5.7	0.0	11.7
Cycle Q Clear(g_c), s	0.4	8.3	8.3	8.1	8.4	0.0	1.4	7.1	0.0	5.7	0.0	11.7
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	373	463	475	281	903	767	84	703	315	452	0	506
V/C Ratio(X)	0.02	0.58	0.58	0.84	0.42	0.00	0.47	0.62	0.00	0.72	0.00	0.74
Avail Cap(c_a), veh/h	676	1007	1034	306	1502	1277	447	892	399	900	0	1346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	20.3	20.3	25.8	10.5	0.0	29.3	23.1	0.0	26.3	0.0	20.9
Incr Delay (d2), s/veh	0.0	1.1	1.1	15.6	0.4	0.0	1.5	0.9	0.0	1.6	0.0	2.2
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	0.1	4.1	4.3	5.2	4.4	0.0	0.7	3.6	0.0	2.8	0.0	6.2
LnGrp Delay(d),s/veh	17.4	21.4	21.4	41.4	11.0	0.0	30.8	24.0	0.0	27.9	0.0	23.1
LnGrp LOS	B	C	C	D	B		C	C		C		C
Approach Vol, veh/h		550			617			477			700	
Approach Delay, s/veh		21.3			22.6			24.6			25.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		34.7	11.8	16.6	14.1	20.6	7.1	21.4
Change Period (Y+Rc), s		4.1	3.5	4.1	4.1	4.1	4.1	4.1
Max Green Setting (Gmax), s		50.9	16.5	15.9	10.9	35.9	15.9	45.9
Max Q Clear Time (g_c+I1), s		10.4	7.7	9.1	10.1	10.3	3.4	13.7
Green Ext Time (p_c), s		4.0	0.6	1.6	0.0	3.7	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	23.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	60	3	38	29	41	7	843	69	83	907	3
Future Volume (veh/h)	66	60	3	38	29	41	7	843	69	83	907	3
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)	0.99		0.99	0.99		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	69	63	2	40	31	39	7	887	69	87	955	3
Adj No. of Lanes	0	1	0	1	1	1	0	2	0	0	2	0
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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	102	3	233	226	190	46	2569	199	216	2272	7
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	1.00	1.00	1.00	0.79	0.79	0.79
Sat Flow, veh/h	690	841	23	1321	1863	1564	6	3240	251	213	2866	9
Grp Volume(v), veh/h	134	0	0	40	31	39	509	0	454	474	0	571
Grp Sat Flow(s),veh/h/ln	1554	0	0	1321	1863	1564	1849	0	1647	1395	0	1693
Q Serve(g_s), s	6.1	0.0	0.0	0.0	1.3	2.0	0.0	0.0	0.0	0.0	0.0	9.5
Cycle Q Clear(g_c), s	7.4	0.0	0.0	2.7	1.3	2.0	0.0	0.0	0.0	6.4	0.0	9.5
Prop In Lane	0.51		0.01	1.00		1.00	0.01		0.15	0.18		0.01
Lane Grp Cap(c), veh/h	250	0	0	233	226	190	1507	0	1306	1153	0	1343
V/C Ratio(X)	0.54	0.00	0.00	0.17	0.14	0.21	0.34	0.00	0.35	0.41	0.00	0.43
Avail Cap(c_a), veh/h	563	0	0	504	608	511	1507	0	1306	1153	0	1343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.95	0.00	0.95	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.9	0.0	0.0	35.9	35.3	35.6	0.0	0.0	0.0	2.6	0.0	2.9
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.1	0.1	0.2	0.6	0.0	0.7	1.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	0.9	0.7	0.9	0.2	0.0	0.3	3.5	0.0	4.6
LnGrp Delay(d),s/veh	38.6	0.0	0.0	36.0	35.4	35.8	0.6	0.0	0.7	3.7	0.0	3.9
LnGrp LOS	D			D	D	D	A		A	A		A
Approach Vol, veh/h		134			110			963			1045	
Approach Delay, s/veh		38.6			35.8			0.6			3.8	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		75.5		14.5		75.5		14.5
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		52.9		29.4		52.9		29.4
Max Q Clear Time (g_c+I1), s		2.0		9.4		11.5		4.7
Green Ext Time (p_c), s		4.3		0.5		5.6		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		6.1
HCM 2010 LOS		A

Intersection	
Intersection Delay, s/veh	3.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	95	904	70	790
Demand Flow Rate, veh/h	97	922	71	805
Vehicles Circulating, veh/h	799	83	746	53
Vehicles Exiting, veh/h	59	734	150	82
Ped Vol Crossing Leg, #/h	0	35	70	0
Ped Cap Adj	1.000	0.995	0.990	1.000
Approach Delay, s/veh	6.6	0.2	5.9	5.6
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.530	0.470
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	870	4.328	4.645	4.328
Entry Flow, veh/h	97	52	1947	71	427	378
Cap Entry Lane, veh/h	720	1323	0.980	753	1286	1358
Entry HV Adj Factor	0.980	0.986	853	0.986	0.980	0.982
Flow Entry, veh/h	95	51	1900	70	419	371
Cap Entry, veh/h	706	1299	0.449	736	1260	1333
V/C Ratio	0.135	0.039	0.0	0.095	0.332	0.278
Control Delay, s/veh	6.6	3.1	A	5.9	5.9	5.1
LOS	A	A	2	A	A	A
95th %tile Queue, veh	0	0		0	1	1

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	28	105	27	61	177
Future Vol, veh/h	13	28	105	27	61	177
Conflicting Peds, #/hr	27	2	0	56	56	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	31	115	30	67	195

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	542	188	0	0	201	0
Stage 1	186	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	501	854	-	-	1371	-
Stage 1	846	-	-	-	-	-
Stage 2	709	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	435	807	-	-	1298	-
Mov Cap-2 Maneuver	435	-	-	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	635	1298	-
HCM Lane V/C Ratio	-	-	0.071	0.052	-
HCM Control Delay (s)	-	-	11.1	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	32	39	48	99	23
Future Vol, veh/h	13	32	39	48	99	23
Conflicting Peds, #/hr	11	5	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	34	42	52	106	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	295	153	160	0	-	0
Stage 1	148	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	696	893	1419	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	637	864	1380	-	-	-
Mov Cap-2 Maneuver	637	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	855	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	3.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1380	-	783	-	-
HCM Lane V/C Ratio	0.03	-	0.062	-	-
HCM Control Delay (s)	7.7	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	56	9	20	28	38	3	864	12	53	895	3
Future Volume (veh/h)	22	56	9	20	28	38	3	864	12	53	895	3
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)	0.96		0.92	0.95		0.96	1.00		0.99	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	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	23	59	7	21	29	20	3	909	13	56	942	1
Adj No. of Lanes	0	1	0	0	1	1	0	2	0	0	2	0
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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	203	21	140	171	237	42	2648	38	147	2377	2
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.76	0.76	0.76	1.00	1.00	1.00
Sat Flow, veh/h	273	1301	134	536	1098	1516	2	3493	50	136	3135	3
Grp Volume(v), veh/h	89	0	0	50	0	20	485	0	440	483	0	516
Grp Sat Flow(s),veh/h/ln	1708	0	0	1634	0	1516	1859	0	1685	1579	0	1694
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	7.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0	2.1	0.0	1.0	7.7	0.0	7.7	0.0	0.0	0.0
Prop In Lane	0.26		0.08	0.42		1.00	0.01		0.03	0.12		0.00
Lane Grp Cap(c), veh/h	317	0	0	312	0	237	1450	0	1278	1242	0	1285
V/C Ratio(X)	0.28	0.00	0.00	0.16	0.00	0.08	0.33	0.00	0.34	0.39	0.00	0.40
Avail Cap(c_a), veh/h	634	0	0	612	0	529	1450	0	1278	1242	0	1285
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	0.97	0.00	0.97	1.00	0.00	1.00	0.87	0.00	0.87
Uniform Delay (d), s/veh	33.7	0.0	0.0	32.9	0.0	32.5	3.6	0.0	3.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.1	0.6	0.0	0.7	0.8	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	1.1	0.0	0.4	4.2	0.0	3.8	0.3	0.0	0.3
LnGrp Delay(d),s/veh	33.9	0.0	0.0	33.0	0.0	32.5	4.2	0.0	4.3	0.8	0.0	0.8
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		89			70			925			999	
Approach Delay, s/veh		33.9			32.9			4.2			0.8	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		72.3		17.7		72.3		17.7
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		50.9		31.4		50.9		31.4
Max Q Clear Time (g_c+I1), s		9.7		5.9		2.0		4.1
Green Ext Time (p_c), s		4.0		0.3		5.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	0	39	0	0	0	60	639	0	0	482	25
Future Volume (veh/h)	143	0	39	0	0	0	60	639	0	0	482	25
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92				1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h	166	0	30				70	743	0	0	560	21
Adj No. of Lanes	0	1	0				1	2	0	0	2	0
Peak Hour Factor	0.86	0.92	0.86				0.86	0.86	0.92	0.92	0.86	0.86
Percent Heavy Veh, %	0	2	0				2	2	0	0	2	2
Cap, veh/h	385	0	70				98	1785	0	0	1186	44
Arrive On Green	0.27	0.00	0.27				0.06	0.50	0.00	0.00	0.34	0.34
Sat Flow, veh/h	1454	0	263				1774	3632	0	0	3563	130
Grp Volume(v), veh/h	196	0	0				70	743	0	0	285	296
Grp Sat Flow(s),veh/h/ln	1716	0	0				1774	1770	0	0	1770	1830
Q Serve(g_s), s	3.5	0.0	0.0				1.4	4.9	0.0	0.0	4.7	4.7
Cycle Q Clear(g_c), s	3.5	0.0	0.0				1.4	4.9	0.0	0.0	4.7	4.7
Prop In Lane	0.85		0.15				1.00		0.00	0.00		0.07
Lane Grp Cap(c), veh/h	455	0	0				98	1785	0	0	605	626
V/C Ratio(X)	0.43	0.00	0.00				0.71	0.42	0.00	0.00	0.47	0.47
Avail Cap(c_a), veh/h	966	0	0				998	2883	0	0	1441	1491
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	0.0	0.0				17.3	5.8	0.0	0.0	9.6	9.6
Incr Delay (d2), s/veh	0.6	0.0	0.0				3.6	0.2	0.0	0.0	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0				0.8	2.4	0.0	0.0	2.4	2.5
LnGrp Delay(d),s/veh	12.0	0.0	0.0				20.9	6.0	0.0	0.0	10.4	10.4
LnGrp LOS	B						C	A			B	B
Approach Vol, veh/h		196						813			581	
Approach Delay, s/veh		12.0						7.3			10.4	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.1	17.4		13.9		23.4		
Change Period (Y+Rc), s	4.0	4.6		4.0		4.6		
Max Green Setting (Gmax), s	21.0	30.4		21.0		30.4		
Max Q Clear Time (g_c+I1), s	3.4	6.7		5.5		6.9		
Green Ext Time (p_c), s	0.1	5.2		1.0		7.5		

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	259	40	94	270	216	14	390	212	167	363	40
Future Volume (veh/h)	26	259	40	94	270	216	14	390	212	167	363	40
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	29	285	37	103	297	164	15	429	145	184	399	37
Adj No. of Lanes	1	1	1	1	1	1	0	2	1	0	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	404	636	527	438	636	532	125	1406	619	387	783	75
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	921	1863	1546	1047	1863	1558	37	3399	1498	527	1894	182
Grp Volume(v), veh/h	29	285	37	103	297	164	237	207	145	283	0	337
Grp Sat Flow(s),veh/h/ln	921	1863	1546	1047	1863	1558	1826	1610	1498	950	0	1652
Q Serve(g_s), s	0.9	4.2	0.6	3.0	4.4	2.7	0.0	3.0	2.2	6.3	0.0	5.3
Cycle Q Clear(g_c), s	5.3	4.2	0.6	7.2	4.4	2.7	3.0	3.0	2.2	9.3	0.0	5.3
Prop In Lane	1.00		1.00	1.00		1.00	0.06		1.00	0.65		0.11
Lane Grp Cap(c), veh/h	404	636	527	438	636	532	865	666	619	562	0	684
V/C Ratio(X)	0.07	0.45	0.07	0.24	0.47	0.31	0.27	0.31	0.23	0.50	0.00	0.49
Avail Cap(c_a), veh/h	1035	1912	1586	1155	1912	1599	1659	1395	1298	1027	0	1432
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	0.00	1.00
Uniform Delay (d), s/veh	11.1	9.0	7.8	11.8	9.1	8.5	6.9	6.9	6.7	8.9	0.0	7.6
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	0.2	0.9	2.3	1.2	1.5	1.3	0.9	2.3	0.0	2.4
LnGrp Delay(d),s/veh	11.2	9.2	7.8	11.9	9.3	8.6	7.0	7.0	6.7	9.2	0.0	7.8
LnGrp LOS	B	A	A	B	A	A	A	A	A	A		A
Approach Vol, veh/h		351			564			589			620	
Approach Delay, s/veh		9.2			9.6			6.9			8.4	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.1		16.0		19.1		16.0
Change Period (Y+Rc), s		4.6		4.0		4.6		4.0
Max Green Setting (Gmax), s		30.4		36.0		30.4		36.0
Max Q Clear Time (g_c+I1), s		11.3		9.2		5.0		7.3
Green Ext Time (p_c), s		3.1		1.8		2.0		1.3

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												
Traffic Volume (veh/h)	23	287	40	292	474	436	68	400	371	232	280	31
Future Volume (veh/h)	23	287	40	292	474	436	68	400	371	232	280	31
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	23	293	36	298	484	0	69	408	0	237	286	32
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	731	89	317	891	757	120	791	354	366	413	46
Arrive On Green	0.23	0.23	0.23	0.18	0.48	0.00	0.07	0.22	0.00	0.11	0.25	0.25
Sat Flow, veh/h	902	3148	382	1774	1863	1583	1774	3539	1583	3442	1637	183
Grp Volume(v), veh/h	23	163	166	298	484	0	69	408	0	237	0	318
Grp Sat Flow(s),veh/h/ln	902	1770	1760	1774	1863	1583	1774	1770	1583	1721	0	1820
Q Serve(g_s), s	1.2	4.7	4.9	10.1	11.2	0.0	2.3	6.2	0.0	4.0	0.0	9.6
Cycle Q Clear(g_c), s	1.2	4.7	4.9	10.1	11.2	0.0	2.3	6.2	0.0	4.0	0.0	9.6
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	328	411	409	317	891	757	120	791	354	366	0	459
V/C Ratio(X)	0.07	0.40	0.41	0.94	0.54	0.00	0.57	0.52	0.00	0.65	0.00	0.69
Avail Cap(c_a), veh/h	649	1042	1037	317	1556	1322	463	923	413	932	0	1371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	19.8	19.8	24.7	11.2	0.0	27.6	20.8	0.0	26.1	0.0	20.7
Incr Delay (d2), s/veh	0.1	0.6	0.6	34.9	0.5	0.0	4.2	0.5	0.0	1.9	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.4	2.4	8.0	5.8	0.0	1.3	3.1	0.0	2.0	0.0	5.1
LnGrp Delay(d),s/veh	18.5	20.4	20.5	59.6	11.7	0.0	31.8	21.3	0.0	28.1	0.0	22.6
LnGrp LOS	B	C	C	E	B		C	C		C		C
Approach Vol, veh/h		352			782			477			555	
Approach Delay, s/veh		20.3			30.0			22.8			24.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		33.3	10.0	17.7	15.0	18.3	8.2	19.5
Change Period (Y+Rc), s		4.1	3.5	4.1	4.1	4.1	4.1	4.1
Max Green Setting (Gmax), s		50.9	16.5	15.9	10.9	35.9	15.9	45.9
Max Q Clear Time (g_c+I1), s		13.2	6.0	8.2	12.1	6.9	4.3	11.6
Green Ext Time (p_c), s		3.7	0.6	1.6	0.0	2.3	0.1	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	52	7	95	82	141	6	1052	92	91	982	9
Future Volume (veh/h)	49	52	7	95	82	141	6	1052	92	91	982	9
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)	0.98		0.96	0.98		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	52	55	5	101	87	145	6	1119	93	97	1045	10
Adj No. of Lanes	0	1	0	1	1	1	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	117	9	260	273	223	43	2476	205	202	2080	20
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	1.00	1.00	1.00	0.77	0.77	0.77
Sat Flow, veh/h	470	801	59	1310	1863	1524	4	3224	267	201	2708	26
Grp Volume(v), veh/h	112	0	0	101	87	145	645	0	573	494	0	658
Grp Sat Flow(s),veh/h/ln	1331	0	0	1310	1863	1524	1853	0	1641	1245	0	1689
Q Serve(g_s), s	3.7	0.0	0.0	0.0	3.8	8.1	0.0	0.0	0.0	0.0	0.0	13.3
Cycle Q Clear(g_c), s	7.5	0.0	0.0	7.3	3.8	8.1	0.0	0.0	0.0	7.5	0.0	13.3
Prop In Lane	0.46		0.04	1.00		1.00	0.01		0.16	0.20		0.02
Lane Grp Cap(c), veh/h	253	0	0	260	273	223	1463	0	1261	1004	0	1297
V/C Ratio(X)	0.44	0.00	0.00	0.39	0.32	0.65	0.44	0.00	0.45	0.49	0.00	0.51
Avail Cap(c_a), veh/h	509	0	0	496	608	498	1463	0	1261	1004	0	1297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.89	0.00	0.89	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.9	0.0	0.0	35.9	34.4	36.2	0.0	0.0	0.0	3.3	0.0	4.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.2	1.2	0.9	0.0	1.1	1.7	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.0	2.4	2.0	3.5	0.4	0.0	0.4	4.3	0.0	6.5
LnGrp Delay(d),s/veh	36.3	0.0	0.0	36.2	34.6	37.4	0.9	0.0	1.1	5.0	0.0	5.4
LnGrp LOS	D			D	C	D	A		A	A		A
Approach Vol, veh/h		112			333			1218			1152	
Approach Delay, s/veh		36.3			36.3			1.0			5.2	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		73.2		16.8		73.2		16.8
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		52.9		29.4		52.9		29.4
Max Q Clear Time (g_c+I1), s		2.0		9.5		15.3		10.1
Green Ext Time (p_c), s		6.1		0.4		7.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	3.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	122	908	81	762
Demand Flow Rate, veh/h	124	927	83	778
Vehicles Circulating, veh/h	759	74	637	85
Vehicles Exiting, veh/h	104	646	245	71
Ped Vol Crossing Leg, #/h	0	28	63	0
Ped Cap Adj	1.000	0.996	0.991	1.000
Approach Delay, s/veh	6.7	0.3	5.5	5.7
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.530	0.470
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	845	4.328	4.645	4.328
Entry Flow, veh/h	124	82	1945	83	412	366
Cap Entry Lane, veh/h	745	1334	0.980	826	1248	1321
Entry HV Adj Factor	0.980	0.976	828	0.977	0.981	0.979
Flow Entry, veh/h	122	80	1900	81	404	358
Cap Entry, veh/h	730	1296	0.436	800	1224	1293
V/C Ratio	0.166	0.062	0.0	0.101	0.330	0.277
Control Delay, s/veh	6.7	3.3	A	5.5	6.0	5.2
LOS	A	A	2	A	A	A
95th %tile Queue, veh	1	0		0	1	1

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	96	141	19	51	202
Future Vol, veh/h	33	96	141	19	51	202
Conflicting Peds, #/hr	50	1	0	107	107	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	117	172	23	62	246

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	711	292	0	0	302	0
Stage 1	291	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	400	747	-	-	1259	-
Stage 1	759	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	320	670	-	-	1131	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	591	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	524	1131	-
HCM Lane V/C Ratio	-	-	0.3	0.055	-
HCM Control Delay (s)	-	-	14.8	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.2	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	46	45	37	168	48
Future Vol, veh/h	45	46	45	37	168	48
Conflicting Peds, #/hr	14	8	54	0	0	54
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	55	54	45	202	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	452	293	314	0	-	0
Stage 1	285	-	-	-	-	-
Stage 2	167	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	565	746	1246	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	485	702	1182	-	-	-
Mov Cap-2 Maneuver	485	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	4.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1182	-	575	-	-
HCM Lane V/C Ratio	0.046	-	0.191	-	-
HCM Control Delay (s)	8.2	0	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	42	12	31	32	90	22	1024	47	101	966	9
Future Volume (veh/h)	29	42	12	31	32	90	22	1024	47	101	966	9
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)	0.95		0.94	0.95		0.93	0.99		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	31	44	12	33	34	67	23	1078	45	106	1017	5
Adj No. of Lanes	0	1	0	0	1	1	0	2	0	0	2	0
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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	163	38	174	160	253	65	2439	101	206	1949	10
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.74	0.74	0.74	1.00	1.00	1.00
Sat Flow, veh/h	422	948	219	663	930	1468	32	3286	136	212	2626	13
Grp Volume(v), veh/h	87	0	0	67	0	67	594	0	552	481	0	647
Grp Sat Flow(s),veh/h/ln	1589	0	0	1593	0	1468	1787	0	1666	1159	0	1692
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	3.6	0.0	0.0	11.5	5.6	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0	2.8	0.0	3.6	10.9	0.0	11.5	17.1	0.0	0.0
Prop In Lane	0.36		0.14	0.49		1.00	0.04		0.08	0.22		0.01
Lane Grp Cap(c), veh/h	328	0	0	334	0	253	1368	0	1237	909	0	1256
V/C Ratio(X)	0.27	0.00	0.00	0.20	0.00	0.26	0.43	0.00	0.45	0.53	0.00	0.52
Avail Cap(c_a), veh/h	598	0	0	602	0	512	1368	0	1237	909	0	1256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	0.95	0.00	0.95	1.00	0.00	1.00	0.78	0.00	0.78
Uniform Delay (d), s/veh	32.4	0.0	0.0	32.0	0.0	32.3	4.4	0.0	4.5	0.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.2	1.0	0.0	1.2	1.7	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	1.4	0.0	1.5	5.8	0.0	5.6	1.9	0.0	0.4
LnGrp Delay(d),s/veh	32.6	0.0	0.0	32.1	0.0	32.5	5.4	0.0	5.6	2.1	0.0	1.2
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		87			134			1146			1128	
Approach Delay, s/veh		32.6			32.3			5.5			1.6	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		70.9		19.1		70.9		19.1
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		50.9		31.4		50.9		31.4
Max Q Clear Time (g_c+I1), s		13.5		5.8		19.1		5.6
Green Ext Time (p_c), s		5.7		0.3		6.6		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	0	88	0	0	0	88	765	0	0	505	62
Future Volume (veh/h)	100	0	88	0	0	0	88	765	0	0	505	62
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90				1.00		1.00	1.00		0.87
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h	109	0	66				96	832	0	0	549	57
Adj No. of Lanes	0	1	0				1	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0				2	2	0	0	2	2
Cap, veh/h	295	0	179				124	1788	0	0	1102	114
Arrive On Green	0.29	0.00	0.29				0.07	0.51	0.00	0.00	0.35	0.35
Sat Flow, veh/h	1010	0	612				1774	3632	0	0	3282	329
Grp Volume(v), veh/h	175	0	0				96	832	0	0	303	303
Grp Sat Flow(s),veh/h/ln	1622	0	0				1774	1770	0	0	1770	1749
Q Serve(g_s), s	3.8	0.0	0.0				2.4	6.7	0.0	0.0	6.0	6.1
Cycle Q Clear(g_c), s	3.8	0.0	0.0				2.4	6.7	0.0	0.0	6.0	6.1
Prop In Lane	0.62		0.38				1.00		0.00	0.00		0.19
Lane Grp Cap(c), veh/h	473	0	0				124	1788	0	0	611	604
V/C Ratio(X)	0.37	0.00	0.00				0.78	0.47	0.00	0.00	0.50	0.50
Avail Cap(c_a), veh/h	767	0	0				839	2392	0	0	1212	1198
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	0.0	0.0				20.3	7.1	0.0	0.0	11.5	11.5
Incr Delay (d2), s/veh	0.5	0.0	0.0				3.9	0.3	0.0	0.0	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0				1.3	3.3	0.0	0.0	3.0	3.0
LnGrp Delay(d),s/veh	13.0	0.0	0.0				24.2	7.4	0.0	0.0	12.4	12.4
LnGrp LOS	B						C	A			B	B
Approach Vol, veh/h		175						928			606	
Approach Delay, s/veh		13.0						9.1			12.4	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	7.1	20.3		17.0		27.4		
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0		
Max Green Setting (Gmax), s	21.0	* 30		21.0		30.0		
Max Q Clear Time (g_c+I1), s	4.4	8.1		5.8		8.7		
Green Ext Time (p_c), s	0.1	5.4		0.9		8.1		

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	259	28	91	304	285	9	501	178	201	442	38
Future Volume (veh/h)	15	259	28	91	304	285	9	501	178	201	442	38
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	2	2	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	0.99		0.95	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	15	267	19	94	313	216	9	516	110	207	456	36
Adj No. of Lanes	1	1	1	1	1	1	0	2	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	333	588	487	403	587	491	102	1595	699	399	855	70
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	865	1863	1541	1081	1863	1556	15	3441	1508	525	1848	151
Grp Volume(v), veh/h	15	267	19	94	313	216	281	244	110	303	0	396
Grp Sat Flow(s),veh/h/ln	865	1863	1541	1081	1863	1556	1846	1610	1508	864	0	1660
Q Serve(g_s), s	0.6	4.4	0.3	2.9	5.4	4.3	0.0	3.7	1.6	8.5	0.0	6.5
Cycle Q Clear(g_c), s	5.9	4.4	0.3	7.4	5.4	4.3	3.7	3.7	1.6	12.2	0.0	6.5
Prop In Lane	1.00		1.00	1.00		1.00	0.03		1.00	0.68		0.09
Lane Grp Cap(c), veh/h	333	588	487	403	587	491	951	746	699	555	0	769
V/C Ratio(X)	0.05	0.45	0.04	0.23	0.53	0.44	0.30	0.33	0.16	0.55	0.00	0.52
Avail Cap(c_a), veh/h	873	1737	1437	1070	1737	1451	1769	1477	1383	996	0	1522
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	0.00	1.00
Uniform Delay (d), s/veh	13.8	10.7	9.3	13.9	11.1	10.6	6.7	6.7	6.1	9.5	0.0	7.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.1	0.3	0.2	0.1	0.1	0.0	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.3	0.1	1.1	3.0	1.8	1.9	1.7	0.7	2.8	0.0	3.0
LnGrp Delay(d),s/veh	13.8	10.9	9.3	14.2	11.5	10.8	6.7	6.8	6.2	9.8	0.0	7.6
LnGrp LOS	B	B	A	B	B	B	A	A	A	A		A
Approach Vol, veh/h		301			623			635			699	
Approach Delay, s/veh		10.9			11.7			6.6			8.6	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.5		16.1		22.5		16.1
Change Period (Y+Rc), s		4.6		4.0		4.6		4.0
Max Green Setting (Gmax), s		35.4		36.0		35.4		36.0
Max Q Clear Time (g_c+I1), s		14.2		7.9		5.7		9.4
Green Ext Time (p_c), s		3.7		1.2		2.3		2.0

Intersection Summary		
HCM 2010 Ctrl Delay		9.2
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	879	34	236	357	401	37	405	503	326	341	17
Future Volume (veh/h)	8	879	34	236	357	401	37	405	503	326	341	17
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	9	999	32	268	406	0	42	460	0	370	388	19
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	1233	39	235	997	848	80	662	296	465	475	23
Arrive On Green	0.35	0.35	0.35	0.13	0.54	0.00	0.05	0.19	0.00	0.14	0.27	0.27
Sat Flow, veh/h	969	3493	112	1774	1863	1583	1774	3539	1583	3442	1757	86
Grp Volume(v), veh/h	9	506	525	268	406	0	42	460	0	370	0	407
Grp Sat Flow(s),veh/h/ln	969	1770	1836	1774	1863	1583	1774	1770	1583	1721	0	1843
Q Serve(g_s), s	0.5	21.3	21.3	10.9	10.6	0.0	1.9	10.0	0.0	8.6	0.0	17.0
Cycle Q Clear(g_c), s	0.5	21.3	21.3	10.9	10.6	0.0	1.9	10.0	0.0	8.6	0.0	17.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	430	625	648	235	997	848	80	662	296	465	0	498
V/C Ratio(X)	0.02	0.81	0.81	1.14	0.41	0.00	0.53	0.69	0.00	0.80	0.00	0.82
Avail Cap(c_a), veh/h	511	773	801	235	1153	980	343	684	306	691	0	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	24.1	24.1	35.7	11.4	0.0	38.4	31.2	0.0	34.5	0.0	28.1
Incr Delay (d2), s/veh	0.0	5.3	5.1	101.5	0.4	0.0	2.0	2.9	0.0	3.2	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	11.3	11.7	11.9	5.5	0.0	1.0	5.1	0.0	4.3	0.0	9.1
LnGrp Delay(d),s/veh	17.4	29.4	29.2	137.2	11.7	0.0	40.4	34.2	0.0	37.7	0.0	31.5
LnGrp LOS	B	C	C	F	B		D	C		D		C
Approach Vol, veh/h		1040			674			502			777	
Approach Delay, s/veh		29.2			61.6			34.7			34.4	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		48.1	14.6	19.5	15.0	33.1	7.8	26.3
Change Period (Y+Rc), s		4.1	3.5	4.1	4.1	4.1	4.1	4.1
Max Green Setting (Gmax), s		50.9	16.5	15.9	10.9	35.9	15.9	45.9
Max Q Clear Time (g_c+I1), s		12.6	10.6	12.0	12.9	23.3	3.9	19.0
Green Ext Time (p_c), s		4.3	0.6	1.1	0.0	5.7	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	38.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	62	3	39	30	42	7	891	71	85	948	3
Future Volume (veh/h)	68	62	3	39	30	42	7	891	71	85	948	3
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)	0.99		0.99	0.99		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	72	65	2	41	32	40	7	938	71	89	998	3
Adj No. of Lanes	0	1	0	1	1	1	0	2	0	0	2	0
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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	104	3	236	233	196	45	2563	193	210	2254	7
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	1.00	1.00	1.00	0.79	0.79	0.79
Sat Flow, veh/h	693	828	22	1319	1863	1564	6	3247	244	206	2855	8
Grp Volume(v), veh/h	139	0	0	41	32	40	537	0	479	492	0	598
Grp Sat Flow(s),veh/h/ln	1544	0	0	1319	1863	1564	1849	0	1649	1377	0	1694
Q Serve(g_s), s	6.4	0.0	0.0	0.0	1.4	2.1	0.0	0.0	0.0	0.0	0.0	10.4
Cycle Q Clear(g_c), s	7.7	0.0	0.0	2.8	1.4	2.1	0.0	0.0	0.0	6.8	0.0	10.4
Prop In Lane	0.52		0.01	1.00		1.00	0.01		0.15	0.18		0.01
Lane Grp Cap(c), veh/h	254	0	0	236	233	196	1500	0	1301	1134	0	1337
V/C Ratio(X)	0.55	0.00	0.00	0.17	0.14	0.20	0.36	0.00	0.37	0.43	0.00	0.45
Avail Cap(c_a), veh/h	561	0	0	502	608	511	1500	0	1301	1134	0	1337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.94	0.00	0.94	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.8	0.0	0.0	35.6	35.0	35.3	0.0	0.0	0.0	2.7	0.0	3.1
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.1	0.1	0.2	0.6	0.0	0.8	1.2	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.0	0.9	0.7	0.9	0.3	0.0	0.3	3.8	0.0	5.1
LnGrp Delay(d),s/veh	38.4	0.0	0.0	35.8	35.1	35.5	0.6	0.0	0.8	3.9	0.0	4.2
LnGrp LOS	D			D	D	D	A		A	A		A
Approach Vol, veh/h		139			113			1016			1090	
Approach Delay, s/veh		38.4			35.5			0.7			4.1	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		75.1		14.9		75.1		14.9
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		52.9		29.4		52.9		29.4
Max Q Clear Time (g_c+I1), s		2.0		9.7		12.4		4.8
Green Ext Time (p_c), s		4.7		0.5		6.0		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		6.1
HCM 2010 LOS		A

Intersection	
Intersection Delay, s/veh	3.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	97	934	114	898
Demand Flow Rate, veh/h	99	953	116	916
Vehicles Circulating, veh/h	910	129	779	54
Vehicles Exiting, veh/h	60	766	230	128
Ped Vol Crossing Leg, #/h	0	35	70	0
Ped Cap Adj	1.000	0.995	0.990	1.000
Approach Delay, s/veh	7.4	0.2	6.8	6.0
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.529	0.471
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	900	4.328	4.645	4.328
Entry Flow, veh/h	99	53	1947	116	485	431
Cap Entry Lane, veh/h	655	1273	0.980	732	1284	1356
Entry HV Adj Factor	0.980	0.986	882	0.984	0.981	0.979
Flow Entry, veh/h	97	52	1900	114	476	422
Cap Entry, veh/h	642	1249	0.464	714	1261	1328
V/C Ratio	0.151	0.042	0.0	0.160	0.378	0.318
Control Delay, s/veh	7.4	3.2	A	6.8	6.5	5.6
LOS	A	A	3	A	A	A
95th %tile Queue, veh	1	0		1	2	1

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	29	108	28	63	181
Future Vol, veh/h	13	29	108	28	63	181
Conflicting Peds, #/hr	27	2	0	56	56	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	32	119	31	69	199

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	555	193	0	0	206	0
Stage 1	191	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	493	849	-	-	1365	-
Stage 1	841	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	427	802	-	-	1292	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	644	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	631	1292	-
HCM Lane V/C Ratio	-	-	0.073	0.054	-
HCM Control Delay (s)	-	-	11.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	33	40	61	129	24
Future Vol, veh/h	13	33	40	61	129	24
Conflicting Peds, #/hr	11	5	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	35	43	66	139	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	344	186	194	0	-	0
Stage 1	181	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	652	856	1379	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	596	828	1341	-	-	-
Mov Cap-2 Maneuver	596	-	-	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	842	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	3.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1341	-	746	-	-
HCM Lane V/C Ratio	0.032	-	0.066	-	-
HCM Control Delay (s)	7.8	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	60	9	21	30	40	3	912	12	54	936	3
Future Volume (veh/h)	23	60	9	21	30	40	3	912	12	54	936	3
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)	0.96		0.92	0.95		0.96	1.00		0.99	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	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	24	63	7	22	32	22	3	960	13	57	985	1
Adj No. of Lanes	0	1	0	0	1	1	0	2	0	0	2	0
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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	207	20	138	177	239	42	2646	36	143	2370	2
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.76	0.76	0.76	1.00	1.00	1.00
Sat Flow, veh/h	269	1315	127	517	1125	1517	2	3496	47	130	3131	3
Grp Volume(v), veh/h	94	0	0	54	0	22	512	0	464	503	0	540
Grp Sat Flow(s),veh/h/ln	1711	0	0	1642	0	1517	1859	0	1686	1570	0	1695
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	8.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.0	0.0	2.3	0.0	1.1	8.3	0.0	8.3	0.0	0.0	0.0
Prop In Lane	0.26		0.07	0.41		1.00	0.01		0.03	0.11		0.00
Lane Grp Cap(c), veh/h	320	0	0	315	0	239	1447	0	1276	1233	0	1283
V/C Ratio(X)	0.29	0.00	0.00	0.17	0.00	0.09	0.35	0.00	0.36	0.41	0.00	0.42
Avail Cap(c_a), veh/h	635	0	0	614	0	529	1447	0	1276	1233	0	1283
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	0.97	0.00	0.97	1.00	0.00	1.00	0.85	0.00	0.85
Uniform Delay (d), s/veh	33.7	0.0	0.0	32.9	0.0	32.4	3.7	0.0	3.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.1	0.7	0.0	0.8	0.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	1.2	0.0	0.5	4.4	0.0	4.0	0.3	0.0	0.3
LnGrp Delay(d),s/veh	33.9	0.0	0.0	33.0	0.0	32.5	4.3	0.0	4.5	0.9	0.0	0.9
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		94			76			976			1043	
Approach Delay, s/veh		33.9			32.8			4.4			0.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		72.2		17.8		72.2		17.8
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		50.9		31.4		50.9		31.4
Max Q Clear Time (g_c+I1), s		10.3		6.1		2.0		4.3
Green Ext Time (p_c), s		4.3		0.3		5.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	5.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	0	40	0	0	0	62	686	0	0	542	26
Future Volume (veh/h)	147	0	40	0	0	0	62	686	0	0	542	26
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92				1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h	171	0	32				72	798	0	0	630	22
Adj No. of Lanes	0	1	0				1	2	0	0	2	0
Peak Hour Factor	0.86	0.92	0.86				0.86	0.86	0.92	0.92	0.86	0.86
Percent Heavy Veh, %	0	2	0				2	2	0	0	2	2
Cap, veh/h	383	0	72				98	1824	0	0	1246	43
Arrive On Green	0.27	0.00	0.27				0.06	0.52	0.00	0.00	0.36	0.36
Sat Flow, veh/h	1444	0	270				1774	3632	0	0	3574	121
Grp Volume(v), veh/h	203	0	0				72	798	0	0	320	332
Grp Sat Flow(s),veh/h/ln	1715	0	0				1774	1770	0	0	1770	1833
Q Serve(g_s), s	3.9	0.0	0.0				1.6	5.5	0.0	0.0	5.6	5.6
Cycle Q Clear(g_c), s	3.9	0.0	0.0				1.6	5.5	0.0	0.0	5.6	5.6
Prop In Lane	0.84		0.16				1.00		0.00	0.00		0.07
Lane Grp Cap(c), veh/h	455	0	0				98	1824	0	0	633	656
V/C Ratio(X)	0.45	0.00	0.00				0.73	0.44	0.00	0.00	0.51	0.51
Avail Cap(c_a), veh/h	918	0	0				950	2743	0	0	1371	1420
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	0.0				18.2	5.9	0.0	0.0	9.9	9.9
Incr Delay (d2), s/veh	0.7	0.0	0.0				3.9	0.2	0.0	0.0	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0				0.9	2.7	0.0	0.0	2.8	2.9
LnGrp Delay(d),s/veh	12.7	0.0	0.0				22.1	6.2	0.0	0.0	10.8	10.7
LnGrp LOS	B						C	A			B	B
Approach Vol, veh/h		203						870			652	
Approach Delay, s/veh		12.7						7.5			10.7	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.2	18.6		14.4		24.8		
Change Period (Y+Rc), s	4.0	4.6		4.0		4.6		
Max Green Setting (Gmax), s	21.0	30.4		21.0		30.4		
Max Q Clear Time (g_c+I1), s	3.6	7.6		5.9		7.5		
Green Ext Time (p_c), s	0.1	5.8		1.0		8.0		

Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	288	41	96	240	237	14	408	217	196	380	41
Future Volume (veh/h)	27	288	41	96	240	237	14	408	217	196	380	41
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	30	316	38	105	264	187	15	448	150	215	418	38
Adj No. of Lanes	1	1	1	1	1	1	0	2	1	0	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	392	632	524	386	632	529	110	1522	672	409	790	74
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	929	1863	1545	1017	1863	1558	35	3403	1502	567	1765	166
Grp Volume(v), veh/h	30	316	38	105	264	187	247	216	150	291	0	380
Grp Sat Flow(s),veh/h/ln	929	1863	1545	1017	1863	1558	1827	1610	1502	841	0	1657
Q Serve(g_s), s	1.0	5.4	0.7	3.7	4.4	3.6	0.0	3.4	2.5	9.4	0.0	6.6
Cycle Q Clear(g_c), s	5.4	5.4	0.7	9.1	4.4	3.6	3.4	3.4	2.5	12.8	0.0	6.6
Prop In Lane	1.00		1.00	1.00		1.00	0.06		1.00	0.74		0.10
Lane Grp Cap(c), veh/h	392	632	524	386	632	529	912	720	672	531	0	741
V/C Ratio(X)	0.08	0.50	0.07	0.27	0.42	0.35	0.27	0.30	0.22	0.55	0.00	0.51
Avail Cap(c_a), veh/h	906	1663	1379	949	1663	1391	1450	1214	1132	822	0	1249
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	0.00	1.00
Uniform Delay (d), s/veh	12.3	10.6	9.0	14.2	10.3	10.0	7.1	7.1	6.8	10.3	0.0	8.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.8	0.3	1.0	2.2	1.6	1.7	1.5	1.0	2.8	0.0	3.0
LnGrp Delay(d),s/veh	12.4	10.8	9.0	14.4	10.4	10.2	7.2	7.2	6.9	10.7	0.0	8.2
LnGrp LOS	B	B	A	B	B	B	A	A	A	B		A
Approach Vol, veh/h		384			556			613			671	
Approach Delay, s/veh		10.8			11.1			7.1			9.3	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.6		17.7		22.6		17.7
Change Period (Y+Rc), s		4.6		4.0		4.6		4.0
Max Green Setting (Gmax), s		30.4		36.0		30.4		36.0
Max Q Clear Time (g_c+I1), s		14.8		11.1		5.4		7.4
Green Ext Time (p_c), s		3.2		1.7		2.1		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	248	44	353	524	467	75	424	437	274	300	36
Future Volume (veh/h)	31	248	44	353	524	467	75	424	437	274	300	36
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.92	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	253	40	360	535	0	77	433	0	280	306	37
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	678	105	313	868	738	126	796	356	413	428	52
Arrive On Green	0.22	0.22	0.22	0.18	0.47	0.00	0.07	0.22	0.00	0.12	0.26	0.26
Sat Flow, veh/h	860	3034	470	1774	1863	1583	1774	3539	1583	3442	1622	196
Grp Volume(v), veh/h	32	145	148	360	535	0	77	433	0	280	0	343
Grp Sat Flow(s),veh/h/ln	860	1770	1734	1774	1863	1583	1774	1770	1583	1721	0	1818
Q Serve(g_s), s	1.9	4.3	4.5	10.9	13.3	0.0	2.6	6.7	0.0	4.8	0.0	10.6
Cycle Q Clear(g_c), s	1.9	4.3	4.5	10.9	13.3	0.0	2.6	6.7	0.0	4.8	0.0	10.6
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	309	395	387	313	868	738	126	796	356	413	0	480
V/C Ratio(X)	0.10	0.37	0.38	1.15	0.62	0.00	0.61	0.54	0.00	0.68	0.00	0.71
Avail Cap(c_a), veh/h	616	1027	1006	313	1532	1303	456	910	407	918	0	1349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.4	20.3	20.4	25.5	12.4	0.0	27.9	21.2	0.0	26.1	0.0	20.6
Incr Delay (d2), s/veh	0.1	0.6	0.6	98.6	0.7	0.0	4.7	0.6	0.0	1.9	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.2	2.2	13.8	7.0	0.0	1.4	3.3	0.0	2.4	0.0	5.5
LnGrp Delay(d),s/veh	19.5	20.9	21.0	124.1	13.1	0.0	32.6	21.8	0.0	28.0	0.0	22.6
LnGrp LOS	B	C	C	F	B		C	C		C		C
Approach Vol, veh/h		325			895			510			623	
Approach Delay, s/veh		20.8			57.7			23.4			25.1	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		32.9	10.9	18.0	15.0	17.9	8.5	20.4
Change Period (Y+Rc), s		4.1	3.5	4.1	4.1	4.1	4.1	4.1
Max Green Setting (Gmax), s		50.9	16.5	15.9	10.9	35.9	15.9	45.9
Max Q Clear Time (g_c+I1), s		15.3	6.8	8.7	12.9	6.5	4.6	12.6
Green Ext Time (p_c), s		4.2	0.7	1.6	0.0	2.1	0.1	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	36.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	53	7	97	84	145	6	1106	94	93	1042	9
Future Volume (veh/h)	50	53	7	97	84	145	6	1106	94	93	1042	9
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)	0.99		0.96	0.98		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	53	56	5	103	89	149	6	1177	95	99	1109	10
Adj No. of Lanes	0	1	0	1	1	1	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	118	9	261	276	226	43	2476	199	193	2075	19
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	1.00	1.00	1.00	0.77	0.77	0.77
Sat Flow, veh/h	468	794	58	1310	1863	1524	4	3232	260	190	2709	24
Grp Volume(v), veh/h	114	0	0	103	89	149	677	0	601	523	0	695
Grp Sat Flow(s),veh/h/ln	1319	0	0	1310	1863	1524	1853	0	1643	1234	0	1690
Q Serve(g_s), s	3.8	0.0	0.0	0.0	3.8	8.3	0.0	0.0	0.0	0.0	0.0	14.7
Cycle Q Clear(g_c), s	7.7	0.0	0.0	7.5	3.8	8.3	0.0	0.0	0.0	8.2	0.0	14.7
Prop In Lane	0.46		0.04	1.00		1.00	0.01		0.16	0.19		0.01
Lane Grp Cap(c), veh/h	254	0	0	261	276	226	1460	0	1258	993	0	1294
V/C Ratio(X)	0.45	0.00	0.00	0.39	0.32	0.66	0.46	0.00	0.48	0.53	0.00	0.54
Avail Cap(c_a), veh/h	506	0	0	494	608	498	1460	0	1258	993	0	1294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.87	0.00	0.87	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	0.0	35.8	34.3	36.2	0.0	0.0	0.0	3.4	0.0	4.2
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.2	1.2	0.9	0.0	1.1	2.0	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	2.4	2.0	3.6	0.4	0.0	0.4	4.6	0.0	7.3
LnGrp Delay(d),s/veh	36.3	0.0	0.0	36.2	34.5	37.4	0.9	0.0	1.1	5.4	0.0	5.8
LnGrp LOS	D			D	C	D	A		A	A		A
Approach Vol, veh/h		114			341			1278			1218	
Approach Delay, s/veh		36.3			36.3			1.0			5.6	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		73.0		17.0		73.0		17.0
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		52.9		29.4		52.9		29.4
Max Q Clear Time (g_c+I1), s		2.0		9.7		16.7		10.3
Green Ext Time (p_c), s		6.7		0.4		7.7		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	126	945	178	853
Demand Flow Rate, veh/h	129	964	182	870
Vehicles Circulating, veh/h	852	174	666	88
Vehicles Exiting, veh/h	106	674	314	171
Ped Vol Crossing Leg, #/h	0	28	63	0
Ped Cap Adj	1.000	0.996	0.991	1.000
Approach Delay, s/veh	7.5	0.3	7.1	6.1
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.530	0.470
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	879	4.328	4.645	4.328
Entry Flow, veh/h	129	85	1945	182	461	409
Cap Entry Lane, veh/h	688	1225	0.980	806	1245	1318
Entry HV Adj Factor	0.973	0.976	862	0.979	0.981	0.980
Flow Entry, veh/h	126	83	1900	178	452	401
Cap Entry, veh/h	670	1191	0.454	782	1221	1292
V/C Ratio	0.187	0.070	0.0	0.228	0.370	0.310
Control Delay, s/veh	7.5	3.6	A	7.1	6.5	5.6
LOS	A	A	2	A	A	A
95th %tile Queue, veh	1	0		1	2	1

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	98	145	19	52	207
Future Vol, veh/h	34	98	145	19	52	207
Conflicting Peds, #/hr	50	1	0	107	107	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	120	177	23	63	252

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	724	297	0	0	307	0
Stage 1	296	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	393	742	-	-	1254	-
Stage 1	755	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	314	666	-	-	1126	-
Mov Cap-2 Maneuver	314	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.1	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	517	1126	-
HCM Lane V/C Ratio	-	-	0.311	0.056	-
HCM Control Delay (s)	-	-	15.1	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.2	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	46	47	46	70	195	49
Future Vol, veh/h	46	47	46	70	195	49
Conflicting Peds, #/hr	14	8	54	0	0	54
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	57	55	84	235	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	527	327	348	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	512	714	1211	-	-	-
Stage 1	737	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	438	672	1149	-	-	-
Mov Cap-2 Maneuver	438	-	-	-	-	-
Stage 1	665	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	3.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1149	-	532	-	-
HCM Lane V/C Ratio	0.048	-	0.211	-	-
HCM Control Delay (s)	8.3	0	13.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	43	12	32	33	92	23	1077	48	105	1024	9
Future Volume (veh/h)	30	43	12	32	33	92	23	1077	48	105	1024	9
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)	0.95		0.94	0.95		0.93	0.99		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	32	45	12	34	35	69	24	1134	47	111	1078	5
Adj No. of Lanes	0	1	0	0	1	1	0	2	0	0	2	0
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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	163	37	175	161	254	65	2433	100	199	1924	9
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.74	0.74	0.74	1.00	1.00	1.00
Sat Flow, veh/h	427	946	214	665	930	1468	32	3280	135	202	2594	12
Grp Volume(v), veh/h	89	0	0	69	0	69	623	0	582	504	0	690
Grp Sat Flow(s),veh/h/ln	1586	0	0	1594	0	1468	1780	0	1667	1116	0	1692
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	3.7	0.0	0.0	12.5	8.2	0.0	0.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0	2.9	0.0	3.7	11.7	0.0	12.5	20.6	0.0	0.0
Prop In Lane	0.36		0.13	0.49		1.00	0.04		0.08	0.22		0.01
Lane Grp Cap(c), veh/h	328	0	0	335	0	254	1362	0	1236	877	0	1255
V/C Ratio(X)	0.27	0.00	0.00	0.21	0.00	0.27	0.46	0.00	0.47	0.58	0.00	0.55
Avail Cap(c_a), veh/h	597	0	0	603	0	512	1362	0	1236	877	0	1255
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	0.92	0.00	0.92	1.00	0.00	1.00	0.74	0.00	0.74
Uniform Delay (d), s/veh	32.4	0.0	0.0	32.0	0.0	32.3	4.5	0.0	4.6	0.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.2	1.1	0.0	1.3	2.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	1.5	0.0	1.5	6.3	0.0	6.1	2.6	0.0	0.4
LnGrp Delay(d),s/veh	32.6	0.0	0.0	32.1	0.0	32.5	5.6	0.0	5.9	2.6	0.0	1.3
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		89			138			1205			1194	
Approach Delay, s/veh		32.6			32.3			5.8			1.8	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		70.8		19.2		70.8		19.2
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		50.9		31.4		50.9		31.4
Max Q Clear Time (g_c+I1), s		14.5		5.9		22.6		5.7
Green Ext Time (p_c), s		6.1		0.3		7.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	6.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	0	90	0	0	0	90	852	0	0	562	64
Future Volume (veh/h)	103	0	90	0	0	0	90	852	0	0	562	64
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90				1.00		1.00	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h	112	0	68				98	926	0	0	611	60
Adj No. of Lanes	0	1	0				1	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0				2	2	0	0	2	2
Cap, veh/h	294	0	178				127	1810	0	0	1131	111
Arrive On Green	0.29	0.00	0.29				0.07	0.51	0.00	0.00	0.35	0.35
Sat Flow, veh/h	1009	0	613				1774	3632	0	0	3303	314
Grp Volume(v), veh/h	180	0	0				98	926	0	0	336	335
Grp Sat Flow(s),veh/h/ln	1621	0	0				1774	1770	0	0	1770	1755
Q Serve(g_s), s	4.0	0.0	0.0				2.5	7.9	0.0	0.0	6.9	7.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0				2.5	7.9	0.0	0.0	6.9	7.0
Prop In Lane	0.62		0.38				1.00		0.00	0.00		0.18
Lane Grp Cap(c), veh/h	472	0	0				127	1810	0	0	623	618
V/C Ratio(X)	0.38	0.00	0.00				0.77	0.51	0.00	0.00	0.54	0.54
Avail Cap(c_a), veh/h	748	0	0				818	2332	0	0	1181	1172
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	0.0	0.0				20.8	7.4	0.0	0.0	11.8	11.8
Incr Delay (d2), s/veh	0.5	0.0	0.0				3.8	0.3	0.0	0.0	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0				1.3	3.8	0.0	0.0	3.5	3.5
LnGrp Delay(d),s/veh	13.4	0.0	0.0				24.6	7.7	0.0	0.0	12.8	12.9
LnGrp LOS	B						C	A			B	B
Approach Vol, veh/h		180						1024			671	
Approach Delay, s/veh		13.4						9.3			12.8	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	7.2	21.0		17.3		28.3		
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0		
Max Green Setting (Gmax), s	21.0	* 30		21.0		30.0		
Max Q Clear Time (g_c+I1), s	4.5	9.0		6.0		9.9		
Green Ext Time (p_c), s	0.1	6.0		0.9		8.9		

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	272	29	93	294	331	9	522	183	248	462	39
Future Volume (veh/h)	15	272	29	93	294	331	9	522	183	248	462	39
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	2	2	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	15	280	20	96	303	263	9	538	115	256	476	37
Adj No. of Lanes	1	1	1	1	1	1	0	2	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	566	468	348	565	473	87	1763	774	440	862	69
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	836	1863	1540	1067	1863	1555	14	3443	1512	585	1684	134
Grp Volume(v), veh/h	15	280	20	96	303	263	293	254	115	309	0	460
Grp Sat Flow(s),veh/h/ln	836	1863	1540	1067	1863	1555	1847	1610	1512	739	0	1664
Q Serve(g_s), s	0.7	5.7	0.4	3.8	6.3	6.6	0.0	4.2	1.9	13.7	0.0	8.6
Cycle Q Clear(g_c), s	7.0	5.7	0.4	9.5	6.3	6.6	4.2	4.2	1.9	17.9	0.0	8.6
Prop In Lane	1.00		1.00	1.00		1.00	0.03		1.00	0.83		0.08
Lane Grp Cap(c), veh/h	290	566	468	348	565	473	1025	824	774	518	0	852
V/C Ratio(X)	0.05	0.49	0.04	0.28	0.54	0.56	0.29	0.31	0.15	0.60	0.00	0.54
Avail Cap(c_a), veh/h	691	1446	1196	852	1446	1207	1478	1229	1154	736	0	1271
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	0.00	1.00
Uniform Delay (d), s/veh	16.9	13.3	11.5	17.5	13.6	13.6	6.7	6.7	6.1	11.4	0.0	7.8
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.2	0.3	0.4	0.1	0.1	0.0	0.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	0.2	1.3	3.5	2.8	2.2	1.9	0.8	3.5	0.0	4.0
LnGrp Delay(d),s/veh	16.9	13.6	11.5	18.0	14.1	14.0	6.7	6.8	6.1	11.8	0.0	8.0
LnGrp LOS	B	B	B	B	B	B	A	A	A	B		A
Approach Vol, veh/h		315			662			662			769	
Approach Delay, s/veh		13.6			14.6			6.6			9.5	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.4		18.0		28.4		18.0
Change Period (Y+Rc), s		4.6		4.0		4.6		4.0
Max Green Setting (Gmax), s		35.4		36.0		35.4		36.0
Max Q Clear Time (g_c+I1), s		19.9		9.0		6.2		11.5
Green Ext Time (p_c), s		3.9		1.2		2.4		2.0

Intersection Summary		
HCM 2010 Ctrl Delay		10.7
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	879	34	237	357	401	37	405	505	326	341	17
Future Volume (veh/h)	8	879	34	237	357	401	37	405	505	326	341	17
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	9	999	32	269	406	0	42	460	0	370	388	19
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	1233	39	235	997	848	80	662	296	465	475	23
Arrive On Green	0.35	0.35	0.35	0.13	0.54	0.00	0.05	0.19	0.00	0.14	0.27	0.27
Sat Flow, veh/h	969	3493	112	1774	1863	1583	1774	3539	1583	3442	1757	86
Grp Volume(v), veh/h	9	506	525	269	406	0	42	460	0	370	0	407
Grp Sat Flow(s),veh/h/ln	969	1770	1836	1774	1863	1583	1774	1770	1583	1721	0	1843
Q Serve(g_s), s	0.5	21.3	21.3	10.9	10.6	0.0	1.9	10.0	0.0	8.6	0.0	17.0
Cycle Q Clear(g_c), s	0.5	21.3	21.3	10.9	10.6	0.0	1.9	10.0	0.0	8.6	0.0	17.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	430	625	648	235	997	848	80	662	296	465	0	498
V/C Ratio(X)	0.02	0.81	0.81	1.14	0.41	0.00	0.53	0.69	0.00	0.80	0.00	0.82
Avail Cap(c_a), veh/h	511	773	801	235	1153	980	343	684	306	691	0	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	24.1	24.1	35.7	11.4	0.0	38.4	31.2	0.0	34.5	0.0	28.1
Incr Delay (d2), s/veh	0.0	5.3	5.1	103.0	0.4	0.0	2.0	2.9	0.0	3.2	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	11.3	11.7	12.0	5.5	0.0	1.0	5.1	0.0	4.3	0.0	9.1
LnGrp Delay(d),s/veh	17.4	29.4	29.2	138.7	11.7	0.0	40.4	34.2	0.0	37.7	0.0	31.5
LnGrp LOS	B	C	C	F	B		D	C		D		C
Approach Vol, veh/h		1040			675			502			777	
Approach Delay, s/veh		29.2			62.3			34.7			34.4	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		48.1	14.6	19.5	15.0	33.1	7.8	26.3
Change Period (Y+Rc), s		4.1	3.5	4.1	4.1	4.1	4.1	4.1
Max Green Setting (Gmax), s		50.9	16.5	15.9	10.9	35.9	15.9	45.9
Max Q Clear Time (g_c+I1), s		12.6	10.6	12.0	12.9	23.3	3.9	19.0
Green Ext Time (p_c), s		4.3	0.6	1.1	0.0	5.7	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	39.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	62	3	39	30	42	7	891	71	85	948	3
Future Volume (veh/h)	68	62	3	39	30	42	7	891	71	85	948	3
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)	0.99		0.99	0.99		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	72	65	2	41	32	40	7	938	71	89	998	3
Adj No. of Lanes	0	1	0	1	1	1	0	2	0	0	2	0
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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	104	3	236	233	196	45	2563	193	210	2254	7
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	1.00	1.00	1.00	0.79	0.79	0.79
Sat Flow, veh/h	693	828	22	1319	1863	1564	6	3247	244	206	2855	8
Grp Volume(v), veh/h	139	0	0	41	32	40	537	0	479	492	0	598
Grp Sat Flow(s),veh/h/ln	1544	0	0	1319	1863	1564	1849	0	1649	1377	0	1694
Q Serve(g_s), s	6.4	0.0	0.0	0.0	1.4	2.1	0.0	0.0	0.0	0.0	0.0	10.4
Cycle Q Clear(g_c), s	7.7	0.0	0.0	2.8	1.4	2.1	0.0	0.0	0.0	6.8	0.0	10.4
Prop In Lane	0.52		0.01	1.00		1.00	0.01		0.15	0.18		0.01
Lane Grp Cap(c), veh/h	254	0	0	236	233	196	1500	0	1301	1134	0	1337
V/C Ratio(X)	0.55	0.00	0.00	0.17	0.14	0.20	0.36	0.00	0.37	0.43	0.00	0.45
Avail Cap(c_a), veh/h	561	0	0	502	608	511	1500	0	1301	1134	0	1337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.94	0.00	0.94	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.8	0.0	0.0	35.6	35.0	35.3	0.0	0.0	0.0	2.7	0.0	3.1
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.1	0.1	0.2	0.6	0.0	0.8	1.2	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.0	0.9	0.7	0.9	0.3	0.0	0.3	3.8	0.0	5.1
LnGrp Delay(d),s/veh	38.4	0.0	0.0	35.8	35.1	35.5	0.6	0.0	0.8	3.9	0.0	4.2
LnGrp LOS	D			D	D	D	A		A	A		A
Approach Vol, veh/h		139			113			1016			1090	
Approach Delay, s/veh		38.4			35.5			0.7			4.1	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		75.1		14.9		75.1		14.9
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		52.9		29.4		52.9		29.4
Max Q Clear Time (g_c+I1), s		2.0		9.7		12.4		4.8
Green Ext Time (p_c), s		4.7		0.5		6.0		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		6.1
HCM 2010 LOS		A

Intersection	
Intersection Delay, s/veh	3.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	97	934	116	899
Demand Flow Rate, veh/h	99	953	118	917
Vehicles Circulating, veh/h	911	131	779	54
Vehicles Exiting, veh/h	60	766	231	130
Ped Vol Crossing Leg, #/h	0	35	70	0
Ped Cap Adj	1.000	0.995	0.990	1.000
Approach Delay, s/veh	7.4	0.2	6.8	6.0
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.530	0.470
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	900	4.328	4.645	4.328
Entry Flow, veh/h	99	53	1947	118	486	431
Cap Entry Lane, veh/h	655	1270	0.980	732	1284	1356
Entry HV Adj Factor	0.980	0.986	882	0.984	0.980	0.980
Flow Entry, veh/h	97	52	1900	116	477	423
Cap Entry, veh/h	642	1247	0.464	714	1259	1330
V/C Ratio	0.151	0.042	0.0	0.163	0.378	0.318
Control Delay, s/veh	7.4	3.2	A	6.8	6.5	5.6
LOS	A	A	3	A	A	A
95th %tile Queue, veh	1	0		1	2	1

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	29	108	29	63	181
Future Vol, veh/h	14	29	108	29	63	181
Conflicting Peds, #/hr	27	2	0	56	56	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	32	119	32	69	199

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	555	193	0	0	207	0
Stage 1	191	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	493	849	-	-	1364	-
Stage 1	841	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	427	802	-	-	1291	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	644	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	624	1291	-
HCM Lane V/C Ratio	-	-	0.076	0.054	-
HCM Control Delay (s)	-	-	11.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	34	41	61	129	25
Future Vol, veh/h	15	34	41	61	129	25
Conflicting Peds, #/hr	11	5	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	37	44	66	139	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	347	187	195	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	165	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	650	855	1378	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	593	827	1340	-	-	-
Mov Cap-2 Maneuver	593	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	3.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1340	-	738	-	-
HCM Lane V/C Ratio	0.033	-	0.071	-	-
HCM Control Delay (s)	7.8	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	60	9	22	30	40	3	912	13	54	936	3
Future Volume (veh/h)	23	60	9	22	30	40	3	912	13	54	936	3
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)	0.96		0.92	0.95		0.96	1.00		0.99	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	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	24	63	7	23	32	22	3	960	14	57	985	1
Adj No. of Lanes	0	1	0	0	1	1	0	2	0	0	2	0
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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	207	20	141	174	239	42	2643	38	143	2370	2
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.76	0.76	0.76	1.00	1.00	1.00
Sat Flow, veh/h	269	1315	127	535	1101	1517	2	3492	51	130	3131	3
Grp Volume(v), veh/h	94	0	0	55	0	22	512	0	465	503	0	540
Grp Sat Flow(s),veh/h/ln	1711	0	0	1636	0	1517	1859	0	1685	1570	0	1695
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	8.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.0	0.0	2.3	0.0	1.1	8.3	0.0	8.3	0.0	0.0	0.0
Prop In Lane	0.26		0.07	0.42		1.00	0.01		0.03	0.11		0.00
Lane Grp Cap(c), veh/h	320	0	0	314	0	239	1447	0	1276	1233	0	1283
V/C Ratio(X)	0.29	0.00	0.00	0.17	0.00	0.09	0.35	0.00	0.36	0.41	0.00	0.42
Avail Cap(c_a), veh/h	635	0	0	612	0	529	1447	0	1276	1233	0	1283
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	0.97	0.00	0.97	1.00	0.00	1.00	0.85	0.00	0.85
Uniform Delay (d), s/veh	33.7	0.0	0.0	32.9	0.0	32.4	3.7	0.0	3.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.1	0.7	0.0	0.8	0.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	1.2	0.0	0.5	4.4	0.0	4.0	0.3	0.0	0.3
LnGrp Delay(d),s/veh	33.9	0.0	0.0	33.0	0.0	32.5	4.3	0.0	4.5	0.9	0.0	0.9
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		94			77			977			1043	
Approach Delay, s/veh		33.9			32.8			4.4			0.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		72.2		17.8		72.2		17.8
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		50.9		31.4		50.9		31.4
Max Q Clear Time (g_c+I1), s		10.3		6.1		2.0		4.3
Green Ext Time (p_c), s		4.3		0.3		5.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	5.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	0	41	0	0	0	63	686	0	0	542	26
Future Volume (veh/h)	147	0	41	0	0	0	63	686	0	0	542	26
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92				1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h	171	0	33				73	798	0	0	630	22
Adj No. of Lanes	0	1	0				1	2	0	0	2	0
Peak Hour Factor	0.86	0.92	0.86				0.86	0.86	0.92	0.92	0.86	0.86
Percent Heavy Veh, %	0	2	0				2	2	0	0	2	2
Cap, veh/h	382	0	74				99	1824	0	0	1245	43
Arrive On Green	0.27	0.00	0.27				0.06	0.52	0.00	0.00	0.36	0.36
Sat Flow, veh/h	1436	0	277				1774	3632	0	0	3574	121
Grp Volume(v), veh/h	204	0	0				73	798	0	0	320	332
Grp Sat Flow(s),veh/h/ln	1713	0	0				1774	1770	0	0	1770	1833
Q Serve(g_s), s	3.9	0.0	0.0				1.6	5.5	0.0	0.0	5.6	5.6
Cycle Q Clear(g_c), s	3.9	0.0	0.0				1.6	5.5	0.0	0.0	5.6	5.6
Prop In Lane	0.84		0.16				1.00		0.00	0.00		0.07
Lane Grp Cap(c), veh/h	456	0	0				99	1824	0	0	633	655
V/C Ratio(X)	0.45	0.00	0.00				0.74	0.44	0.00	0.00	0.51	0.51
Avail Cap(c_a), veh/h	916	0	0				948	2738	0	0	1369	1418
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	0.0				18.3	6.0	0.0	0.0	9.9	9.9
Incr Delay (d2), s/veh	0.7	0.0	0.0				3.9	0.2	0.0	0.0	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0				0.9	2.7	0.0	0.0	2.8	2.9
LnGrp Delay(d),s/veh	12.7	0.0	0.0				22.2	6.2	0.0	0.0	10.8	10.8
LnGrp LOS	B						C	A			B	B
Approach Vol, veh/h		204						871			652	
Approach Delay, s/veh		12.7						7.5			10.8	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.2	18.6		14.4		24.8		
Change Period (Y+Rc), s	4.0	4.6		4.0		4.6		
Max Green Setting (Gmax), s	21.0	30.4		21.0		30.4		
Max Q Clear Time (g_c+I1), s	3.6	7.6		5.9		7.5		
Green Ext Time (p_c), s	0.1	5.8		1.0		8.0		

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	288	41	96	240	237	14	409	217	196	381	41
Future Volume (veh/h)	27	288	41	96	240	237	14	409	217	196	381	41
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	30	316	38	105	264	187	15	449	150	215	419	38
Adj No. of Lanes	1	1	1	1	1	1	0	2	1	0	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	392	632	524	386	632	529	110	1524	672	409	791	74
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	929	1863	1545	1017	1863	1558	35	3403	1502	566	1766	165
Grp Volume(v), veh/h	30	316	38	105	264	187	248	216	150	291	0	381
Grp Sat Flow(s),veh/h/ln	929	1863	1545	1017	1863	1558	1827	1610	1502	841	0	1657
Q Serve(g_s), s	1.0	5.5	0.7	3.7	4.4	3.6	0.0	3.5	2.5	9.4	0.0	6.7
Cycle Q Clear(g_c), s	5.4	5.5	0.7	9.1	4.4	3.6	3.4	3.5	2.5	12.9	0.0	6.7
Prop In Lane	1.00		1.00	1.00		1.00	0.06		1.00	0.74		0.10
Lane Grp Cap(c), veh/h	392	632	524	386	632	529	913	721	672	531	0	742
V/C Ratio(X)	0.08	0.50	0.07	0.27	0.42	0.35	0.27	0.30	0.22	0.55	0.00	0.51
Avail Cap(c_a), veh/h	905	1661	1378	948	1661	1389	1448	1212	1131	821	0	1247
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	0.00	1.00
Uniform Delay (d), s/veh	12.4	10.6	9.0	14.3	10.3	10.0	7.1	7.1	6.8	10.3	0.0	8.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.8	0.3	1.0	2.2	1.6	1.7	1.5	1.0	2.8	0.0	3.0
LnGrp Delay(d),s/veh	12.4	10.8	9.1	14.4	10.4	10.2	7.2	7.2	6.9	10.7	0.0	8.2
LnGrp LOS	B	B	A	B	B	B	A	A	A	B		A
Approach Vol, veh/h		384			556			614			672	
Approach Delay, s/veh		10.8			11.1			7.1			9.3	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.7		17.7		22.7		17.7
Change Period (Y+Rc), s		4.6		4.0		4.6		4.0
Max Green Setting (Gmax), s		30.4		36.0		30.4		36.0
Max Q Clear Time (g_c+I1), s		14.9		11.1		5.5		7.5
Green Ext Time (p_c), s		3.2		1.7		2.1		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	248	44	359	524	467	75	424	441	274	300	36
Future Volume (veh/h)	31	248	44	359	524	467	75	424	441	274	300	36
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.92	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	253	40	366	535	0	77	433	0	280	306	37
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	678	105	313	868	738	126	796	356	413	428	52
Arrive On Green	0.22	0.22	0.22	0.18	0.47	0.00	0.07	0.22	0.00	0.12	0.26	0.26
Sat Flow, veh/h	860	3034	470	1774	1863	1583	1774	3539	1583	3442	1622	196
Grp Volume(v), veh/h	32	145	148	366	535	0	77	433	0	280	0	343
Grp Sat Flow(s),veh/h/ln	860	1770	1734	1774	1863	1583	1774	1770	1583	1721	0	1818
Q Serve(g_s), s	1.9	4.3	4.5	10.9	13.3	0.0	2.6	6.7	0.0	4.8	0.0	10.6
Cycle Q Clear(g_c), s	1.9	4.3	4.5	10.9	13.3	0.0	2.6	6.7	0.0	4.8	0.0	10.6
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	309	395	387	313	868	738	126	796	356	413	0	480
V/C Ratio(X)	0.10	0.37	0.38	1.17	0.62	0.00	0.61	0.54	0.00	0.68	0.00	0.71
Avail Cap(c_a), veh/h	616	1027	1006	313	1532	1303	456	910	407	918	0	1349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.4	20.3	20.4	25.5	12.4	0.0	27.9	21.2	0.0	26.1	0.0	20.6
Incr Delay (d2), s/veh	0.1	0.6	0.6	105.7	0.7	0.0	4.7	0.6	0.0	1.9	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.2	2.2	14.4	7.0	0.0	1.4	3.3	0.0	2.4	0.0	5.5
LnGrp Delay(d),s/veh	19.5	20.9	21.0	131.2	13.1	0.0	32.6	21.8	0.0	28.0	0.0	22.6
LnGrp LOS	B	C	C	F	B		C	C		C		C
Approach Vol, veh/h		325			901			510			623	
Approach Delay, s/veh		20.8			61.1			23.4			25.1	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		32.9	10.9	18.0	15.0	17.9	8.5	20.4
Change Period (Y+Rc), s		4.1	3.5	4.1	4.1	4.1	4.1	4.1
Max Green Setting (Gmax), s		50.9	16.5	15.9	10.9	35.9	15.9	45.9
Max Q Clear Time (g_c+I1), s		15.3	6.8	8.7	12.9	6.5	4.6	12.6
Green Ext Time (p_c), s		4.2	0.7	1.6	0.0	2.1	0.1	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	53	7	97	84	146	6	1106	94	94	1042	9
Future Volume (veh/h)	50	53	7	97	84	146	6	1106	94	94	1042	9
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)	0.99		0.96	0.98		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	53	56	5	103	89	150	6	1177	95	100	1109	10
Adj No. of Lanes	0	1	0	1	1	1	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	118	9	261	277	227	43	2475	199	194	2069	19
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	1.00	1.00	1.00	0.77	0.77	0.77
Sat Flow, veh/h	468	793	58	1310	1863	1525	4	3232	260	192	2702	24
Grp Volume(v), veh/h	114	0	0	103	89	150	677	0	601	522	0	697
Grp Sat Flow(s),veh/h/ln	1319	0	0	1310	1863	1525	1853	0	1643	1228	0	1690
Q Serve(g_s), s	3.8	0.0	0.0	0.0	3.8	8.4	0.0	0.0	0.0	0.0	0.0	14.8
Cycle Q Clear(g_c), s	7.7	0.0	0.0	7.5	3.8	8.4	0.0	0.0	0.0	8.2	0.0	14.8
Prop In Lane	0.46		0.04	1.00		1.00	0.01		0.16	0.19		0.01
Lane Grp Cap(c), veh/h	255	0	0	261	277	227	1459	0	1258	988	0	1294
V/C Ratio(X)	0.45	0.00	0.00	0.39	0.32	0.66	0.46	0.00	0.48	0.53	0.00	0.54
Avail Cap(c_a), veh/h	506	0	0	494	608	498	1459	0	1258	988	0	1294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.87	0.00	0.87	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	0.0	35.8	34.2	36.2	0.0	0.0	0.0	3.4	0.0	4.2
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.2	1.2	0.9	0.0	1.1	2.0	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	2.4	2.0	3.6	0.4	0.0	0.4	4.6	0.0	7.4
LnGrp Delay(d),s/veh	36.2	0.0	0.0	36.2	34.5	37.4	0.9	0.0	1.1	5.5	0.0	5.8
LnGrp LOS	D			D	C	D	A		A	A		A
Approach Vol, veh/h		114			342			1278			1219	
Approach Delay, s/veh		36.2			36.3			1.0			5.7	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		73.0		17.0		73.0		17.0
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		52.9		29.4		52.9		29.4
Max Q Clear Time (g_c+I1), s		2.0		9.7		16.8		10.4
Green Ext Time (p_c), s		6.7		0.4		7.7		0.7

Intersection Summary		
HCM 2010 Ctrl Delay		8.4
HCM 2010 LOS		A

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	126	945	183	860
Demand Flow Rate, veh/h	129	964	187	877
Vehicles Circulating, veh/h	859	179	666	88
Vehicles Exiting, veh/h	106	674	321	176
Ped Vol Crossing Leg, #/h	0	28	63	0
Ped Cap Adj	1.000	0.996	0.991	1.000
Approach Delay, s/veh	7.6	0.3	7.2	6.1
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.530	0.470
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	879	4.328	4.645	4.328
Entry Flow, veh/h	129	85	1945	187	465	412
Cap Entry Lane, veh/h	684	1220	0.980	806	1245	1318
Entry HV Adj Factor	0.973	0.976	862	0.979	0.980	0.981
Flow Entry, veh/h	126	83	1900	183	456	404
Cap Entry, veh/h	666	1186	0.454	782	1220	1293
V/C Ratio	0.189	0.070	0.0	0.234	0.374	0.313
Control Delay, s/veh	7.6	3.6	A	7.2	6.6	5.6
LOS	A	A	2	A	A	A
95th %tile Queue, veh	1	0		1	2	1

Intersection	
Int Delay, s/veh	4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	99	145	21	53	207
Future Vol, veh/h	36	99	145	21	53	207
Conflicting Peds, #/hr	50	1	0	107	107	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	121	177	26	65	252

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	729	298	0	0	310	0
Stage 1	297	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	390	741	-	-	1250	-
Stage 1	754	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	311	665	-	-	1123	-
Mov Cap-2 Maneuver	311	-	-	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	582	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	510	1123	-
HCM Lane V/C Ratio	-	-	0.323	0.058	-
HCM Control Delay (s)	-	-	15.4	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.2	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	50	49	70	195	55
Future Vol, veh/h	50	50	49	70	195	55
Conflicting Peds, #/hr	14	8	54	0	0	54
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	60	59	84	235	66

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	538	330	355	0	-	0
Stage 1	322	-	-	-	-	-
Stage 2	216	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	504	712	1204	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	820	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	429	670	1142	-	-	-
Mov Cap-2 Maneuver	429	-	-	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	3.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1142	-	523	-	-
HCM Lane V/C Ratio	0.052	-	0.23	-	-
HCM Control Delay (s)	8.3	0	13.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	43	12	34	33	92	23	1077	50	105	1024	9
Future Volume (veh/h)	30	43	12	34	33	92	23	1077	50	105	1024	9
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)	0.95		0.94	0.95		0.93	0.99		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	32	45	12	36	35	69	24	1134	49	111	1078	5
Adj No. of Lanes	0	1	0	0	1	1	0	2	0	0	2	0
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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	163	37	179	156	254	65	2428	104	198	1923	9
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.74	0.74	0.74	1.00	1.00	1.00
Sat Flow, veh/h	427	946	214	687	900	1468	32	3274	140	202	2592	12
Grp Volume(v), veh/h	89	0	0	71	0	69	624	0	583	504	0	690
Grp Sat Flow(s),veh/h/ln	1586	0	0	1587	0	1468	1780	0	1666	1114	0	1692
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	3.7	0.0	0.0	12.5	8.2	0.0	0.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0	3.0	0.0	3.7	11.7	0.0	12.5	20.7	0.0	0.0
Prop In Lane	0.36		0.13	0.51		1.00	0.04		0.08	0.22		0.01
Lane Grp Cap(c), veh/h	328	0	0	335	0	254	1362	0	1235	875	0	1255
V/C Ratio(X)	0.27	0.00	0.00	0.21	0.00	0.27	0.46	0.00	0.47	0.58	0.00	0.55
Avail Cap(c_a), veh/h	597	0	0	600	0	512	1362	0	1235	875	0	1255
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	0.92	0.00	0.92	1.00	0.00	1.00	0.74	0.00	0.74
Uniform Delay (d), s/veh	32.4	0.0	0.0	32.0	0.0	32.3	4.5	0.0	4.6	0.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.2	1.1	0.0	1.3	2.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	1.5	0.0	1.5	6.3	0.0	6.1	2.6	0.0	0.4
LnGrp Delay(d),s/veh	32.6	0.0	0.0	32.1	0.0	32.5	5.6	0.0	5.9	2.6	0.0	1.3
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		89			140			1207			1194	
Approach Delay, s/veh		32.6			32.3			5.8			1.8	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		70.8		19.2		70.8		19.2
Change Period (Y+Rc), s		4.1		3.6		4.1		3.6
Max Green Setting (Gmax), s		50.9		31.4		50.9		31.4
Max Q Clear Time (g_c+I1), s		14.5		5.9		22.7		5.7
Green Ext Time (p_c), s		6.1		0.3		7.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	6.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	0	93	0	0	0	93	852	0	0	562	64
Future Volume (veh/h)	103	0	93	0	0	0	93	852	0	0	562	64
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90				1.00		1.00	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h	112	0	71				101	926	0	0	611	60
Adj No. of Lanes	0	1	0				1	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0				2	2	0	0	2	2
Cap, veh/h	289	0	183				131	1811	0	0	1126	110
Arrive On Green	0.29	0.00	0.29				0.07	0.51	0.00	0.00	0.35	0.35
Sat Flow, veh/h	990	0	628				1774	3632	0	0	3303	314
Grp Volume(v), veh/h	183	0	0				101	926	0	0	336	335
Grp Sat Flow(s),veh/h/ln	1618	0	0				1774	1770	0	0	1770	1755
Q Serve(g_s), s	4.1	0.0	0.0				2.6	7.9	0.0	0.0	7.0	7.0
Cycle Q Clear(g_c), s	4.1	0.0	0.0				2.6	7.9	0.0	0.0	7.0	7.0
Prop In Lane	0.61		0.39				1.00		0.00	0.00		0.18
Lane Grp Cap(c), veh/h	472	0	0				131	1811	0	0	621	616
V/C Ratio(X)	0.39	0.00	0.00				0.77	0.51	0.00	0.00	0.54	0.54
Avail Cap(c_a), veh/h	742	0	0				814	2319	0	0	1175	1165
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.0	0.0	0.0				20.8	7.4	0.0	0.0	11.9	11.9
Incr Delay (d2), s/veh	0.5	0.0	0.0				3.6	0.3	0.0	0.0	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0				1.4	3.8	0.0	0.0	3.5	3.5
LnGrp Delay(d),s/veh	13.5	0.0	0.0				24.5	7.7	0.0	0.0	13.0	13.0
LnGrp LOS	B						C	A			B	B
Approach Vol, veh/h		183						1027			671	
Approach Delay, s/veh		13.5						9.4			13.0	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	7.4	21.1		17.4		28.4		
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0		
Max Green Setting (Gmax), s	21.0	* 30		21.0		30.0		
Max Q Clear Time (g_c+I1), s	4.6	9.0		6.1		9.9		
Green Ext Time (p_c), s	0.1	6.0		0.9		8.8		

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	272	29	93	294	332	9	524	183	249	464	39
Future Volume (veh/h)	15	272	29	93	294	332	9	524	183	249	464	39
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	2	2	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	15	280	20	96	303	264	9	540	115	257	478	37
Adj No. of Lanes	1	1	1	1	1	1	0	2	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	289	565	468	346	565	472	86	1767	776	440	863	68
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	835	1863	1540	1067	1863	1555	14	3443	1512	585	1683	133
Grp Volume(v), veh/h	15	280	20	96	303	264	294	255	115	310	0	462
Grp Sat Flow(s),veh/h/ln	835	1863	1540	1067	1863	1555	1847	1610	1512	736	0	1665
Q Serve(g_s), s	0.7	5.8	0.4	3.8	6.3	6.7	0.0	4.3	1.9	13.8	0.0	8.7
Cycle Q Clear(g_c), s	7.0	5.8	0.4	9.6	6.3	6.7	4.2	4.3	1.9	18.1	0.0	8.7
Prop In Lane	1.00		1.00	1.00		1.00	0.03		1.00	0.83		0.08
Lane Grp Cap(c), veh/h	289	565	468	346	565	472	1027	827	776	517	0	855
V/C Ratio(X)	0.05	0.50	0.04	0.28	0.54	0.56	0.29	0.31	0.15	0.60	0.00	0.54
Avail Cap(c_a), veh/h	686	1439	1190	847	1439	1201	1471	1223	1148	730	0	1264
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	0.00	1.00
Uniform Delay (d), s/veh	17.0	13.4	11.6	17.6	13.7	13.7	6.7	6.7	6.1	11.4	0.0	7.8
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.2	0.3	0.4	0.1	0.1	0.0	0.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.0	0.2	1.4	3.5	2.9	2.2	1.9	0.8	3.6	0.0	4.1
LnGrp Delay(d),s/veh	17.0	13.7	11.6	18.1	14.2	14.1	6.7	6.8	6.1	11.9	0.0	8.0
LnGrp LOS	B	B	B	B	B	B	A	A	A	B		A
Approach Vol, veh/h		315			663			664			772	
Approach Delay, s/veh		13.7			14.7			6.6			9.5	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.6		18.0		28.6		18.0
Change Period (Y+Rc), s		4.6		4.0		4.6		4.0
Max Green Setting (Gmax), s		35.4		36.0		35.4		36.0
Max Q Clear Time (g_c+I1), s		20.1		9.0		6.3		11.6
Green Ext Time (p_c), s		3.9		1.2		2.4		2.0

Intersection Summary		
HCM 2010 Ctrl Delay		10.7
HCM 2010 LOS		B