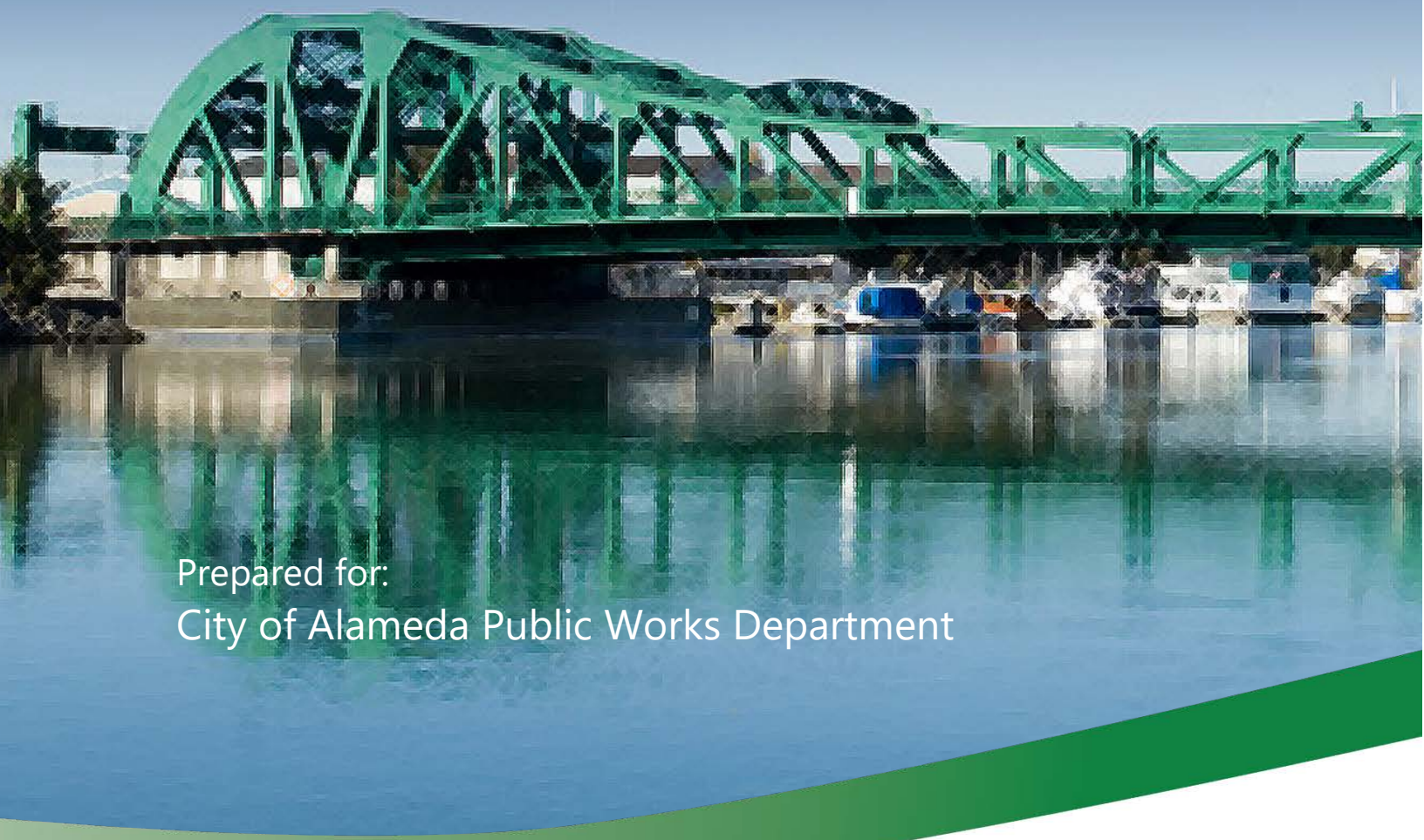
Traffic Study for Proposed 1825 Park Street Hotel in Alameda, California

FINAL REPORT



Prepared for:
City of Alameda Public Works Department

AMG ADVANCED MOBILITY GROUP

Exhibit 3
Item 7-A, January 28, 2019
Planning Board Meeting

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INTRODUCTION AND EXECUTIVE SUMMARY

INTRODUCTION

The purpose of this traffic study is to evaluate potential traffic and/or parking impacts of the proposed development at 1825 Park Street in Alameda, California. The project site is currently occupied with an imported scooter store, which would be converted to the proposed hotel land use. The project would be located at the southwestern corner of the Park Street & Clement Avenue intersection and would provide 96 rooms and 62 parking spaces.

SUMMARY

Based on the results of the analysis, the following is a summary of our findings:

Existing Conditions

- Based on discussions with City and agency staff, four study intersections were selected for analysis, including the project driveway on Clement Street.
- All the study intersections operate at acceptable Level of Service (LOS) D or better.
- The on-street parking survey indicates that approximately 50% of the 253 on-street parking spaces in the project's vicinity, as shown in **Figure 4**, were occupied during the evening peak period

Existing plus Project Conditions

- It is estimated that the project will generate approximately 51 Project generated trips during the AM peak hour and 58 Project generated trips during the PM peak hour. To provide a conservative analysis, existing trips from the scooter shop were not deducted from the expected project trips.
- Similar to Existing Conditions, all the intersections operate at acceptable LOS D or better, except the following intersection:
  - Park Street and Clement Avenue during the AM peak hour. Project traffic contributes 46 trips (approximately two percent) to this intersection. However, this intersection is under design for signal improvements, which would include new signal timing. With the modified signal timing, the intersection would operate at acceptable LOS D.
- In the event of a long eastbound left turn queue at Clement Avenue/Park Street, there is potential for the queue to temporarily block the proposed driveway. In the event that this is observed, Advanced Mobility Group (AMG) recommends installing "Keep Clear" pavement markings on Clement Avenue.
- AMG does not anticipate circulation issues within the proposed parking lot.
- It is estimated that the project will generate demand for approximately 38 parking spaces on a weekday and 62 spaces on a weekend day for the peak parking hour.
- The Project proposes to include 62 parking spaces, including 34 standard parking spaces, 3 accessible spaces, and 25 compact spaces. The Project proposes to include 34 fewer parking spaces than that required by current code.
- The Project proposes to provide sufficient bicycle parking.

Future (2040) Conditions

- All the intersections operate at acceptable LOS D or better, except Park Street and Clement Avenue during both the AM and PM peak hours.

2040 plus Project Conditions

- Similar to the Future (2040) Conditions, all the intersections operate at acceptable LOS D or better, except Park Street and Clement Avenue during both the AM and PM peak hours.
- However, because the project is expected to contribute less than 3% traffic to the intersection, it does not cause a significant impact.

PURPOSE OF PROJECT AND STUDY APPROACH

PROJECT OBJECTIVES DESCRIPTION

The purpose of this traffic study is to identify any potential traffic and parking impacts resultant of converting an existing retail land use to a hotel land use. The proposed hotel would provide 96 rooms and 62 parking spaces in the City of Alameda. The project site location and vicinity map are shown in **Figure 1**, and a detailed site plan is shown in **Figure 2**.

STUDY APPROACH

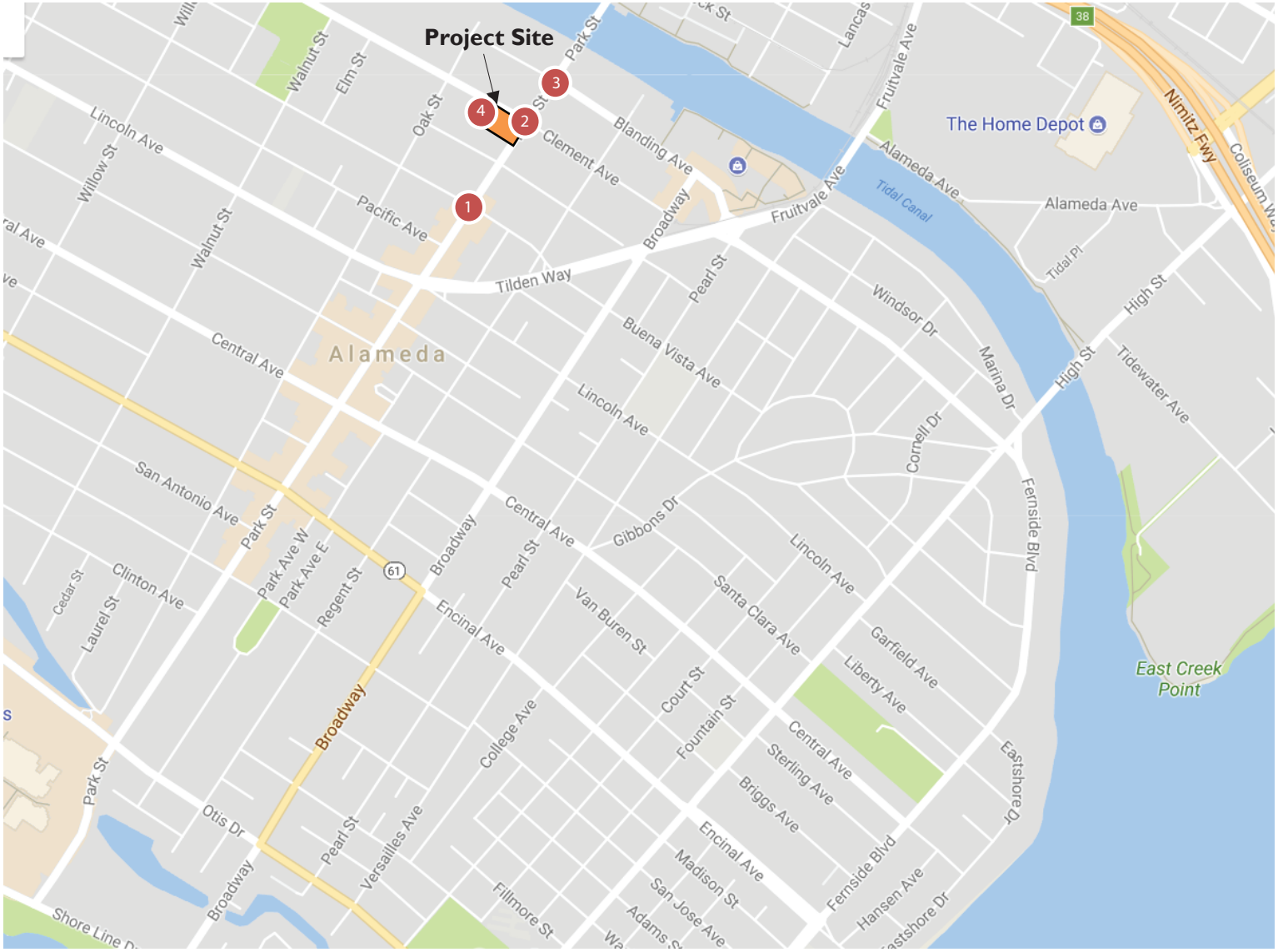
The following are key steps of the study approach:

- Conduct traffic counts to establish baseline traffic conditions
- Conduct trip generation and distribution of project trips
- Determine the Existing plus Project traffic condition
- Determine the Future (2040) traffic condition
- Determine the 2040 plus Project traffic condition
- Determine the impact of project generated traffic based on established Significance Criteria

Traffic Impact Study for Proposed 1825 Park Street Hotel in Alameda, CA

Vicinity Map and Study Intersection Locations

Figure 1



Legend:

X Study Intersection

N

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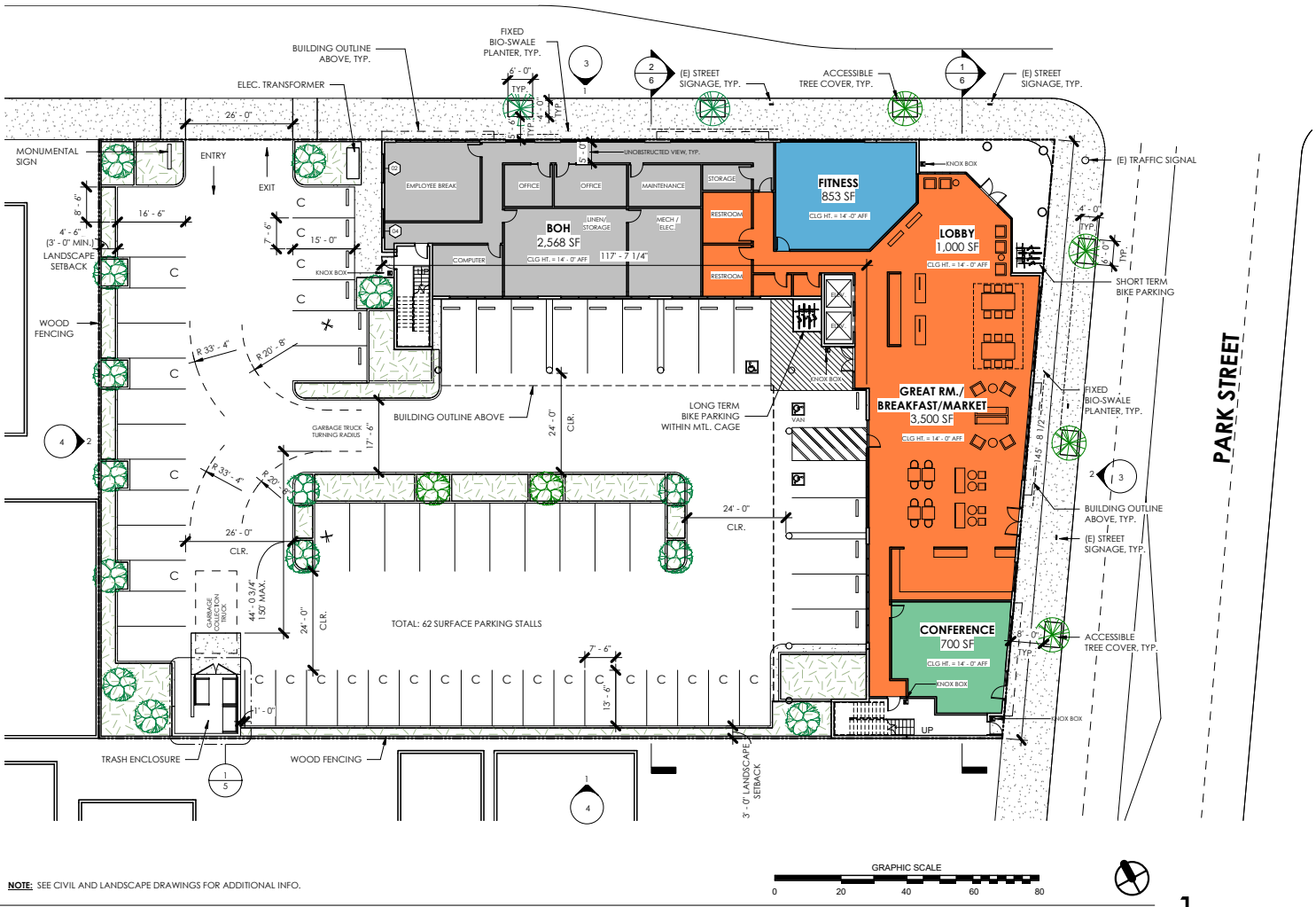
Traffic Impact Study for Proposed 1825 Park Street Hotel in Alameda, CA

Proposed Project Site Plan

Figure 2



Source: HRGA

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SETTING

The following section describes the existing transportation conditions in the project vicinity, including descriptions of the existing street system and intersection operating conditions.

EXISTING STREET NETWORK

Interstate 880 (I-880) is an eight-lane freeway (four mixed-flow lanes per direction) facilitating north-south access between San Jose and Oakland. I-880 also provides access to other regional freeways such as I-80, I-580, State Route (SR) 17, SR 84, SR 92, SR 237 and US 101. Per the California Department of Transportation (Caltrans) Traffic Census Program, I-880 carried between 429,000 and 438,000 vehicles per day (vpd) near the project vicinity in 2015.

SR 61 is located approximately one mile southwest of I-880. SR 61 provides north-south access between Davis Street (San Leandro) and Marina Village Parkway on Alameda Island (Oakland) via multiple surface arterial streets. The roadways of SR 61 generally provide two lanes of travel in each direction, on-street parking and sidewalks on both sides, and turn pockets at intersection approaches.

Blanding Avenue is a two-lane roadway that extends from Tilden Way-Fruitvale Avenue in the east to Oak Street in the west in the City of Alameda and provides access to retail and restaurant land uses. Blanding Avenue provides parallel on-street parking and continuous sidewalks on both sides. The roadway does not provide bicycle facilities, has a posted speed limit of 25 miles per hour (mph), and its intersection with Park Street is operated with a traffic signal.

Buena Vista Avenue is a two-lane roadway that extends from Northwood Drive-Cambridge Drive in the east to Poggi Street in the west and provides access to residential neighborhoods, schools, and retail, restaurant and recreational land uses. Buena Vista Avenue provides parallel on-street parking and continuous sidewalks on both sides. The roadway does not provide bicycle facilities, has a posted speed limit of 25 mph, and its intersection with Park Street is operated with a traffic signal.

Clement Avenue is a two-lane roadway that extends from Broadway in the east to Grand Street in the west and provides access to residential neighborhoods, schools, and retail, restaurant and recreational land uses. Clement Avenue provides parallel on-street parking and continuous sidewalks on both sides. The roadway does not provide bicycle facilities, has a posted speed limit of 25 mph, and its intersection with Park Street is operated with a traffic signal.

Park Street is a two- to four-lane roadway that extends from Shore Line Drive in the south to where it becomes 29th Avenue in the north and provides access to residential neighborhoods, schools, and retail, restaurant and recreational land uses. Park Street generally provides parallel on-street parking and continuous sidewalks on both sides. The roadway does not provide bicycle facilities and has a posted speed limit of 25 mph.

ROADWAY AND INTERSECTION OPERATING CONDITIONS

This section summarizes existing roadway and intersection operating conditions.

Traffic Data Collection

Based on discussions with City staff[1], the following four study intersections as shown in **Figure 1** were selected for analysis:

1. Park Street & Buena Vista Avenue
2. Park Street & Clement Avenue
3. Park Street & Blanding Avenue
4. Clement Avenue & Site Driveway

AMG collected AM (7:00-9:00 AM) and PM (4:00-6:00 PM) peak period intersection turning movement counts in August 2017 at each study intersection.

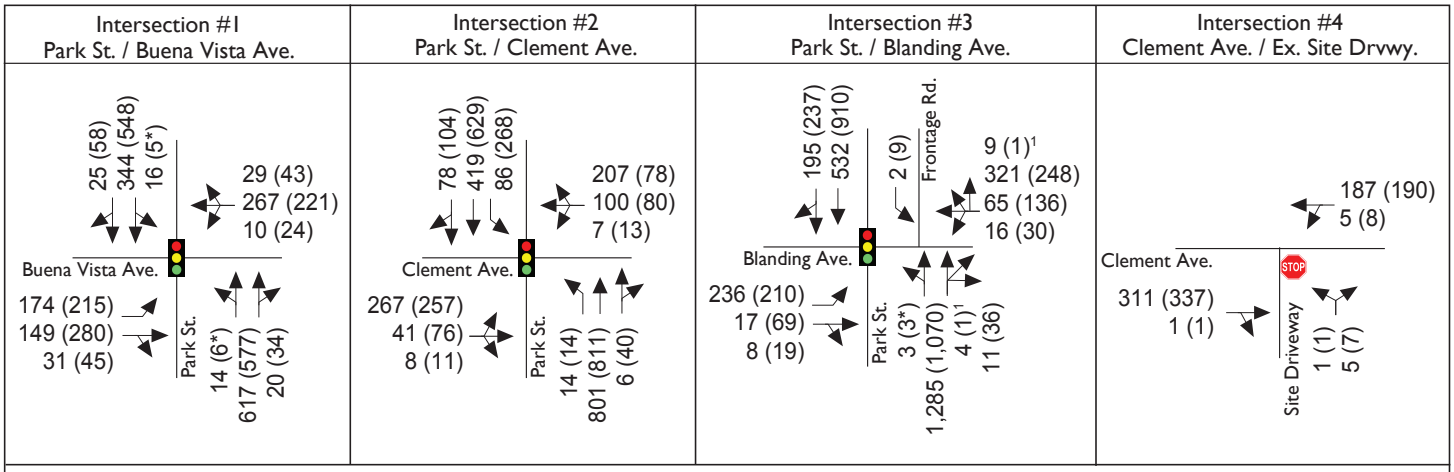
Figure 3 shows the vehicle volumes and lane configurations at each study intersection under Existing Conditions. The collected intersection turning movement counts are included in **Appendix A**.

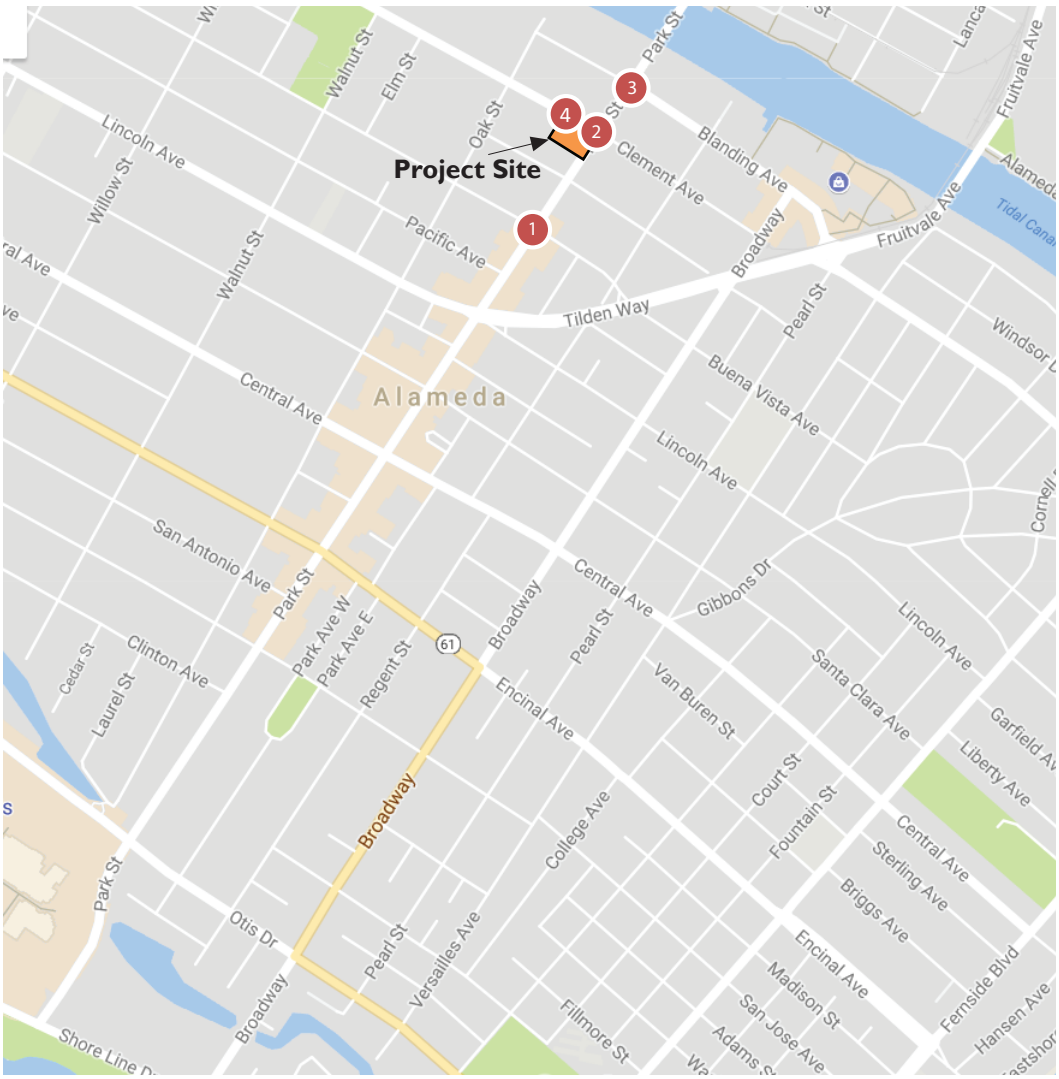
[1] *Discussions with City of Alameda Staff, July 2017 and February 2018*

Traffic Impact Study for Proposed 1825 Park Street Hotel in Alameda, CA

Existing Peak Hour Turning Movement Volumes, Lane Geometry & Controls

Figure 3





Legend:

- Study Intersection
- Signal Control
- Stop Control
- XX (XX) AM (PM) Peak Hour Vehicle Volumes

Notes:

[1] Vehicle movement to Frontage Road

[2] Vehicle volume based on estimated trip generation

* Illegal vehicle movement

N

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LEVEL OF SERVICE METHODOLOGY

Level of Service (LOS) analysis is conducted to determine if a proposed project would induce substantial additional travel, requiring additional capacity in congested areas. LOS is a qualitative measure describing operational conditions within a traffic stream. There are six levels of service defined for each type of facility (i.e., roadway or intersection) that is analyzed. LOS has letter designations ranging from A to F, with LOS A representing free flow traffic with little or no delay and LOS F representing jammed conditions with excessive delay and long back-ups. Procedures for analyzing each type of facility are based on the Highway Capacity Manual 2010 (HCM 2010). LOS for each study intersection was determined in the software package Synchro 9. The relationship between average control delay, driver's perception of traffic, and LOS for signalized intersections is summarized in **Table 1**.

Table 1: Signalized Intersection Level of Service Definitions

LOS	Description
A	Very low control delay, up to 10 seconds per vehicle and V/C ratio no greater than 1.0. Typically assigned when the V/C ratio is low and either progression is extremely favorable, or the cycle length is very short. If due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
B	Control delay greater than 10 and up to 20 seconds per vehicle and V/C ratio no greater than 1.0. Typically assigned when the V/C ratio is low and either progression is highly favorable, or the cycle length is short. More vehicles stop than with LOS A.
C	Control delay greater than 20 and up to 35 seconds per vehicle and V/C ratio no greater than 1.0. Typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle and V/C ratio no greater than 1.0. Typically assigned when the V/C ratio is high and either progression is ineffective, or the cycle length is long. Many vehicles stop, and individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle and V/C ratio no greater than 1.0. Typically assigned when the V/C ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	Control delay exceeds 80 seconds per vehicle or V/C ratio greater than 1.0. Typically assigned when the V/C ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

SIGNIFICANCE CRITERIA

Caltrans Standards

Facilities under the jurisdiction of Caltrans include freeway segments, ramps, ramp terminals, and arterials. Although Caltrans has not designated a LOS standard, Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) indicates attempts to maintain LOS of a State highway facility between the LOS "C/D" threshold. When existing State highway facilities are operating at higher levels of service

than noted above, 20-year forecasts or general plan build-out analysis for the facility should be considered to establish equitable project contributions to local development impact fee programs that address cumulative traffic impacts.

County Standards

The following is the Alameda County Transportation Commission (CTC) criteria of significance per Appendix L of the 2013 Alameda CTC Congestion Management Program (CMP) to determine the potential impacts associated with a proposed project or action:

- Vehicle Delay – the analysis should assess impacts to vehicle delay on Metropolitan Transportation System (MTS) roadway segments. Highway Capacity Manual (HCM) 2010 freeway and urban streets methodologies are the preferred methodologies to study vehicle delay impacts. However, project sponsors may use the HCM 2000 if conformance with local requirements is required.

Per the 2013 CMP, LOS E is considered the minimum acceptable level of service threshold for intersections and roadway segments.

City Standards

For signalized intersections under the jurisdiction of the City of Alameda, LOS D is considered the minimum acceptable threshold. In the situation that the intersection is operating at LOS E or worse without the project, the project would be considered to have a significant impact if it increases traffic by 3% at the intersection. This standard was applied to the study intersections for this project.

EXISTING TRAFFIC CONDITION

This section presents the assessment of traffic conditions without the proposed project.

INTERSECTION LEVEL OF SERVICE

To accurately model the traffic condition, AMG created a Synchro traffic analysis model to determine intersection LOS. The Existing Conditions traffic operations were evaluated based on levels of service criteria. The macroscopic simulation model, Synchro, was used to evaluate several measures (such as lane geometries, signal optimization, signal phasing and traffic control) at the study intersections.

The results of the LOS analysis for the existing intersections and site driveway are shown in **Table 2**. All the studied locations operate at acceptable LOS D or better. Detailed level of service worksheets are provided in **Appendix B**.

Table 2: Existing LOS of Study Intersections

ID	Intersection	Existing Control	AM		PM	
			Delay	LOS	Delay	LOS
1	Park St & Buena Vista Ave	Signal	16.5	B	15.0	B
2	Park St & Clement Ave	Signal	50.6	D	43.5	D
3	Park St & Blanding Ave	Signal	20.1	C	18.1	B
4	Clement & Existing Site Driveway	Driveway	10.7	B	10.8	B

Source: AMG, August 2018

ON-STREET PARKING CONDITIONS

As the proposed project is to be located at the edge of the downtown area of Alameda, there can be moderate to high parking demand at peak times. On-street parking occupancy data was collected in the area bounded by Blanding Avenue, Eagle Avenue, Oak Street, and Everett Street. The data was collected on Wednesday, August 23rd for the expected evening hotel parking peak, between 7pm and 9pm.

Figure 4 and **Table 3** show the current parking occupancy as collected. The area has a total of 253 parking spaces. Eagle Avenue, with closer proximity to downtown has the highest occupancy. Overall, approximately 50% of the spaces in this area are occupied during the peak evening period, meaning that an estimated 127 spaces are available during this time.

Table 3: Parking Occupancy

Period	Stall Inventory	Time	Stalls Occupied	Percent Occupied
Blanding Avenue	77	7:00 PM	29	38%
		8:00 PM	23	30%
Clement Avenue	58	7:00 PM	34	59%
		8:00 PM	25	43%
Eagle Avenue	61	7:00 PM	46	75%
		8:00 PM	49	80%
Oak Street	20	7:00 PM	4	20%
		8:00 PM	2	10%
Park Street	5	7:00 PM	1	20%
		8:00 PM	1	20%
Everett Street	32	7:00 PM	12	38%
		8:00 PM	13	41%
Total	**253**	**7:00 PM**	**126**	**50%**
		8:00 PM	**113**	**45%**

Traffic Impact Study for Proposed 1825 Park Street Hotel in Alameda, CA

On-Street Parking Occupancy: Weekday PM Peak Period (7:00 PM - 9:00 PM)

Figure 4

N

Legend:

- No Parking
- Parking Permitted
- XX No. of Occupied Spaces between 7:00 PM - 8:00 PM
- (XX) No. of Occupied Spaces between 8:00 PM - 9:00 PM
- **XX** No. of Available Parking Spaces

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TRIP GENERATION AND DISTRIBUTION METHODOLOGY

The proposed hotel project consists of 96 rooms and 62 parking spaces. **Figure 2** shows the proposed project site plan.

TRIP GENERATION

Trip generation is defined as the number of "vehicle trips" produced by a particular land use or project. A trip is defined as a one-direction vehicle movement. The total number of trips generated by each land use includes the inbound and outbound trips.

The trip generation estimates for hotel land use were calculated based on the Trip Generation, 9th Edition, published by the Institute of Transportation Engineers (ITE). Using this method, it is estimated that the project will generate approximately 51 and 58 Project generated trips during the AM and PM peak hours, respectively, as shown in **Table 4**.

Table 4: Proposed Project Trip Generation

Land Use	Size		AM Peak				PM Peak			
			Rate	In	Out	Total	Rate	In	Out	Total
ITE Code 310 (Hotel Land Use)[1]	96	Rooms	0.53	30	21	51	0.60	30	28	58

Notes: *1. ITE Trip Generation Manual 9th Edition, 2012.*

TRIP DISTRIBUTION

Trip distribution is a process that determines in what proportion vehicles would be expected to travel between a project site and various destinations outside the project study area. The process of trip assignment determines the various routes that vehicles would take from the project site to each destination using the estimated trip distribution.

The project is expected to "generate" and "attract" trips throughout the City and from other locations throughout the area. Directional trip distribution for project generated trips was estimated based upon existing traffic flow patterns, geographic location of the project site, and location of other destinations. The estimated trip distribution patterns and project trip assignments are shown on **Figure 5**.

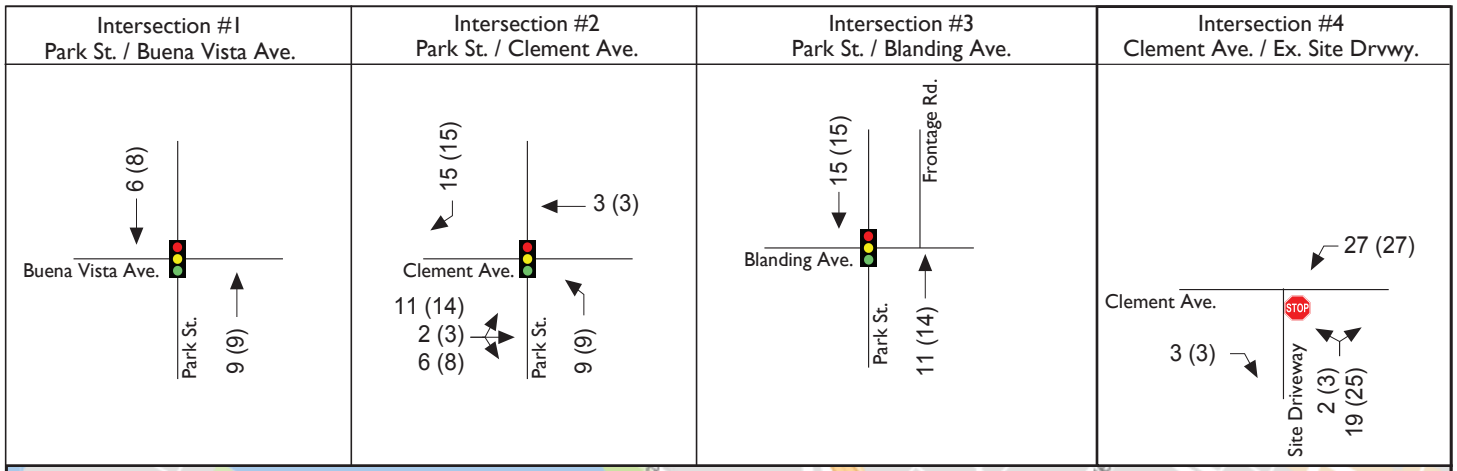
Based on input from City and agency staff, the weekday AM and PM peak hour traffic conditions for the following scenarios were analyzed:

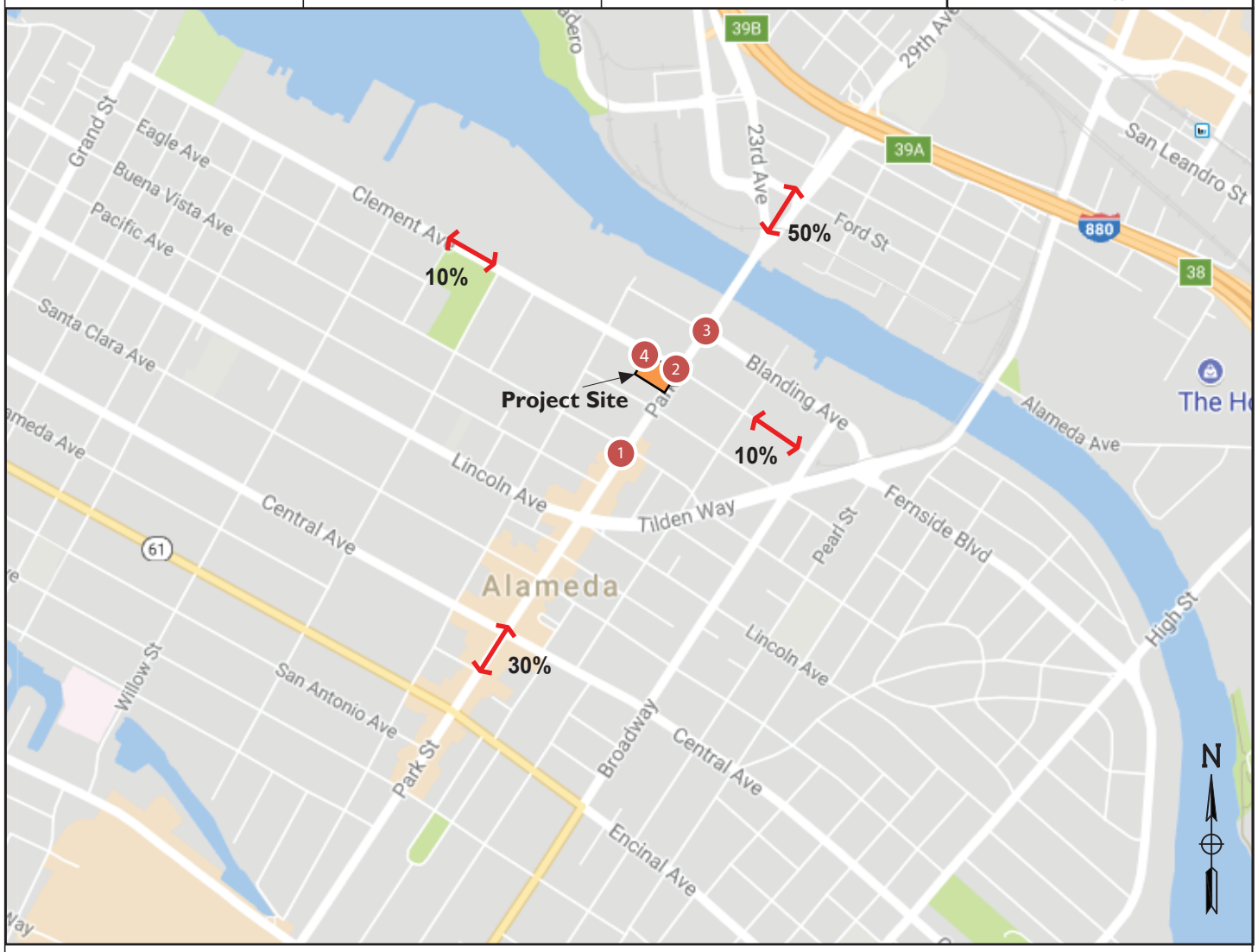
- Existing Conditions
- Existing plus Project Conditions
- 2040 Conditions
- 2040 plus Project Conditions

Traffic Impact Study for Proposed 1825 Park Street Hotel in Alameda, CA

Project Trip Distribution and Assignment

Figure 5





Legend:

- Study Intersection
- Signal Control
- Stop Control
- XX (XX) AM (PM) Peak Hour Vehicle Volumes
- Project Trip Distribution

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PARKING GENERATION

Parking generation is defined as the demand for parking spaces produced by a particular land use or project. Peak demand for parking at hotels typically occurs in the evening between 8:00 pm and 9:00 pm.

The parking generation estimate for this hotel land was calculated in two ways. The first method used the standard reference Parking Generation, 4th Edition, published by the Institute of Transportation Engineers (ITE). Using this method, it is estimated that the project will generate demand for approximately 61 parking spaces during the weekday evening peak and 86 parking spaces during the weekend evening peak, as shown in **Table 6.**

In an effort to better understand current parking demand at a hotel located in the downtown area of Alameda, parking occupancy data was collected at the hotel at 1628 Webster Street. The data for 1628 Webster Street was collected between 7 pm and 9 pm on Thursday, August 9, 2018 (weekday) and July 14, 2018 (weekend). The results are shown in **Table 5.** The parking lot has a total of 61 parking spaces, of which 32.7% (20 spaces) were occupied during the weekday peak evening period (8:30 pm) and 52.5% (32 spaces) were occupied during the weekend peak evening period (7:30 pm).

The 1628 Webster Street Hotel generates demand for approximately 20 parking spaces with 50 rooms, corresponding to a rate of 0.40 during the weekday peak. The parking rate for the weekend peak is 0.64. If this weekend peak rate were applied to the 1825 Park Street Hotel, with 96 rooms the hotel would generate a demand for approximately 62 parking spaces. This rate is slightly lower than the ITE Parking Generation results and Alameda's off-street parking requirements for the project. The hotel (1628 Webster Street) operator provides complimentary on-demand shuttle service to the Airport and BART, which results in lowering the parking demand at hotel site. The proposed project will participate in the Alameda Transportation Management Association (Alameda TMA) – charged with creating more transportation choices in Alameda to reduce reliance on automobiles. The proposed project will provide EasyPass, which is a free bus pass, for each full-time and part-time employee through the Alameda TMA and will provide 24-hour complimentary carpool car share services (such as Lyft and Uber carpool services) instead of single ridership shuttle services. AC Transit's EasyPass promotes the use of AC Transit buses instead of employees driving and parking at the proposed project. The carpool services would transport guests to and from the Oakland Airport, South Shore Center, Fruitvale BART, Harbor Bay Ferry terminal, Alameda Landing, Main Street Ferry terminal, and other destinations within a three-mile radius from the hotel. Studies[2] have shown that hotel parking demand has decreased in many hotels promoting the ride-hailing services, which encourages guests to use Uber and Lyft's carpool services instead of rental cars to get to and from the hotel.

[2] https://walkerconsultants.com/wp-content/uploads/2017/12/TNC-Impacts.pdf

Table 5: 1628 Webster Street Hotel Parking Occupancy

Period	Stall Inventory	Stalls Occupied	Percent Occupied	Parking Rate
Weekday	61	20	27.9%	0.40
Weekend	61	32	52.5%	0.64

Table 6: Proposed Project Parking Generation

Trip Generation Method	Size		Weekday		Weekend	
			Rate	Total	Rate	Total
ITE Code 310 (Hotel Land Use)[1]	96	Rooms	0.64	61	0.9	86
1628 Webster Street Hotel Rate	96	Rooms	0.40	38	0.64	62

Notes: *1. ITE Parking Generation Manual 4th Edition, 2010. ITE Code 310 for urban sites.*

EXISTING PLUS PROJECT TRAFFIC CONDITION

This section presents the assessment of potential transportation impacts of the proposed hotel project at 1825 Park Street.

INTERSECTION LEVEL OF SERVICE ANALYSIS

Figure 6 shows the Existing plus Project Conditions peak hour turning movement volumes and lane geometry. Detailed level of service worksheets are provided in **Appendix C**.

Table 7 shows the LOS under Existing plus Project Conditions. All intersections operate at acceptable LOS D or better, except the Park Street/Clement Avenue intersection during the AM peak hour. However, this intersection is planned for traffic signal improvements, which will include modified signal timing. With modified signal timing, the operation of this intersection is expected to be acceptable LOS D.

Table 7: Existing plus Project Intersection LOS

ID	Intersection	Control	Existing plus Project Condition				AM Peak		PM Peak	
			AM Peak		PM Peak		Proj.	Percent	Proj.	Percent
			Delay	LOS	Delay	LOS	Trips	Traffic	Trips	Traffic
1	Park St & Buena Vista Ave	Signal	16.5	B	15.0	B	15	1%	17	1%
2	Park St & Clement Ave	Signal – existing timing	**58.2**	**E**	47.6	D	46	2%	52	2%
		Signal – modified timing	37.1	D	-	-				
3	Park St & Blanding Ave	Signal	20.0	C	18.4	B	26	1%	29	1%
4	Clement & Proposed Site Driveway	Driveway	10.8	B	11.2	B	51	9%	58	9%

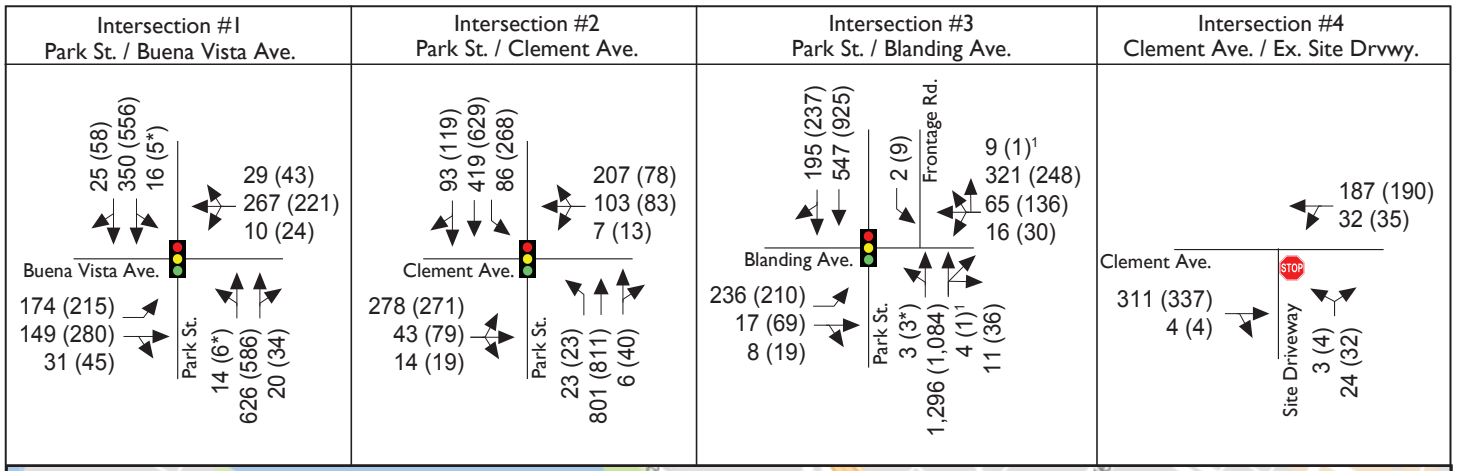
PROPOSED ACCESS AND CIRCULATION

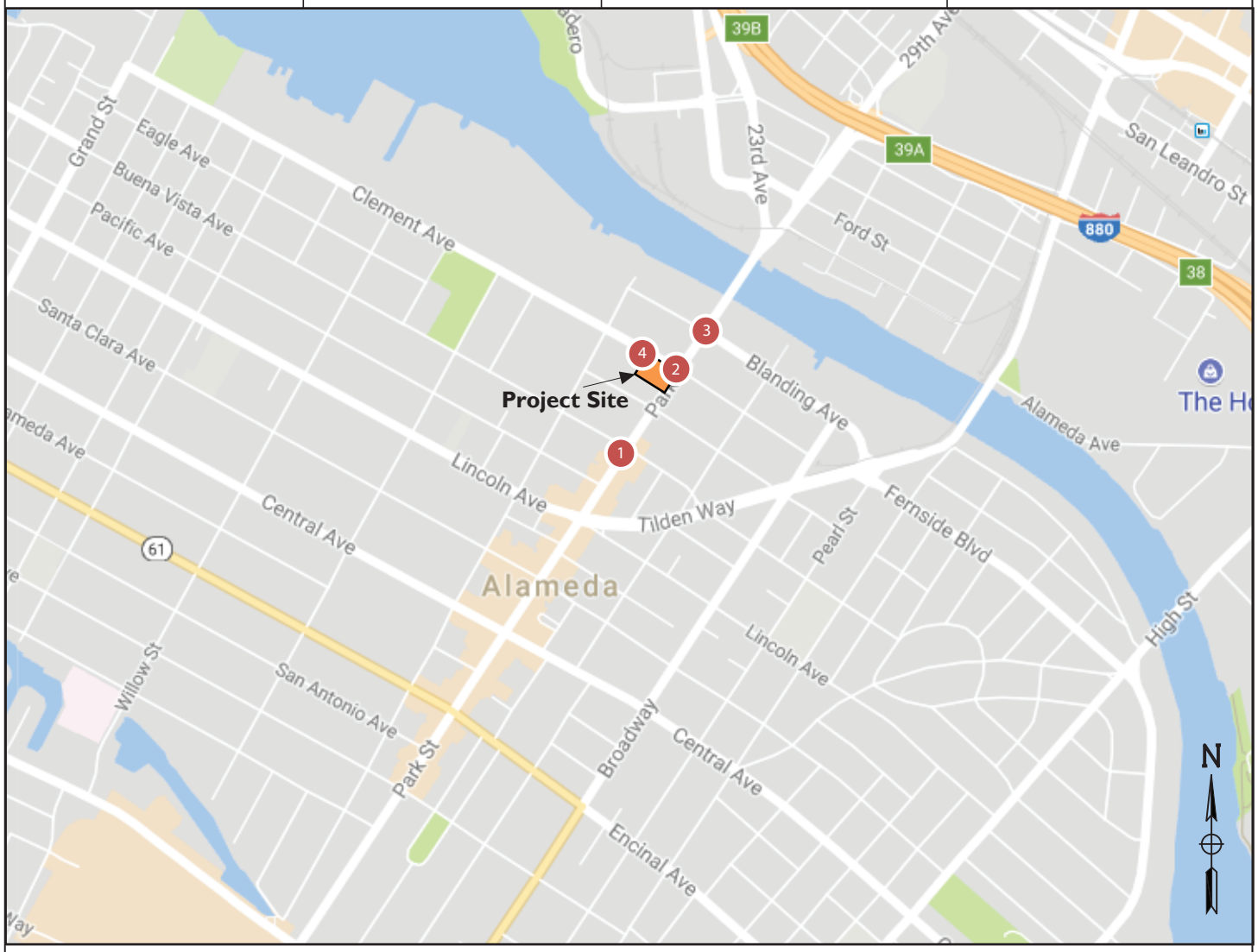
The proposed site plan shows that the parking lot would be accessed via one curb cut on Clement Avenue which is approximately 180 feet from the intersection of Clement Avenue and Park Street. In the event that a long queue was to form eastbound on Clement Avenue approaching Park Street (8 vehicles or more), the driveway could be temporarily blocked for vehicles entering or exiting the site. This could result in the queuing of westbound vehicles attempting to turn left into the parking lot. If this queuing issue were observed, AMG recommends installing "Keep Clear" markings on Clement Avenue to avoid operational issues in the transportation network. AMG did not identify any other circulation issues based on the plan set review.

Traffic Impact Study for Proposed 1825 Park Street Hotel in Alameda, CA

Existing Plus Project Peak Hour Volumes and Lane Configurations

Figure 6





Legend:

- Study Intersection
- Signal Control
- Stop Control
- XX (XX) AM (PM) Peak Hour Vehicle Volumes

Notes:

[1] Vehicle movement to Frontage Road

* Illegal vehicle movement

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PROPOSED PARKING

The Project proposes to include 62 off-street parking spaces in the parking lot accessed via Clement Avenue. The parking code requirements as well as the proposed Project parking provisions are shown in **Table 8**.

It appears that the number of ADA spaces, as compared to the number of parking spaces provided, meets the code requirement. The ADA spaces are located near the hotel entrances and are provided with access aisles, as required. The typical parking space sizes as well as the backup area depth shown on the plans are compliant.

Table 8: Parking Code Requirements

Parking Need	Code Requirement	Provided	Notes
Automobile Parking			
Number of Parking Spaces	96	62	**Less than required**
Number of Regular Space	50% minimum	34	Meets requirements
Number of ADA[1] parking spaces (van accessible)	3 (1)	3 (1)	Meets requirements
Regular space size	8.5′ x 18′	8.5′ x 18′	Meets requirements
Compact space size	7.5′ x 15′	7.5′ x 15′	Meets requirements
Backup Area Depth	24′	24′	Meets requirements
Bicycle Parking			
Number of Long Term Spaces	4	4	Meets requirements
Number of Short Term Spaces	2% of attendance (2 minimum)	6	Meets requirements

Notes: *Based on review preliminary plan set provided by developer.1. ADA – Americans with Disabilities Accessible parking spaces. Requirement based on California Building Code.*

As shown in the table, the Project proposes to include 34 fewer parking spaces than that required by current code. Based on the parking generation results, it is expected that the average peak parking demand would be approximately 38 spaces on a weekday and 62 spaces on a weekend. Therefore, during both weekday and weekend, the parking lot should accommodate the parking demand. In the case that parking demand is not met, vehicles could find parking on-street near the project vicinity. The on-street Parking Conditions review showed that during the peak evening parking time, approximately 127 spaces are available in the area bounded by Blanding Avenue, Eagle Avenue, Oak Street, and Everett Street. On the north and south side of Clement Street alone (nearest to the Project), there were 22 available parking spaces between 8pm and 9pm when the survey was completed. Therefore, the on-street parking spaces, which is not counted for providing zoning compliance, would have enough parking spaces available in the case that parking demand exceeds the parking lot capacity.

The code requires the inclusion of bicycle parking in new developments. The Project provides four long term bicycle parking spaces, which meets the long-term bicycle parking requirements.

FUTURE (2040) TRAFFIC CONDITION

This section presents the assessment of potential transportation impacts of the proposed project.

INTERSECTION LEVEL OF SERVICE ANALYSIS

The future volumes were forecast using the Alameda County Transportation Commission (ACTC) Countywide Travel Demand Model for the year 2040.

Figure 7 shows the resulting 2040 Conditions peak hour turning movement volumes and lane geometry. Detailed level of service worksheets are provided in **Appendix D**.

Table 9 shows the LOS under 2040 Conditions. All intersections operate at acceptable LOS D or better, except the Park Street/Clement Avenue intersection. Based on the ACTC model forecasts, this intersection is expected to have increased traffic on the eastbound and westbound approaches.

Table 9: 2040 Intersection LOS

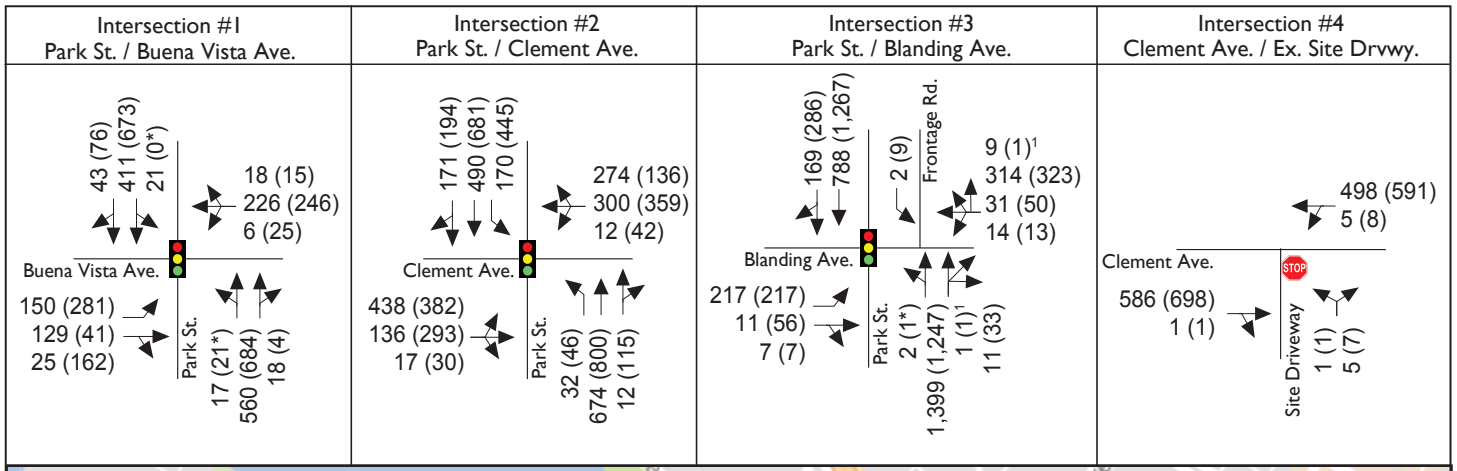
ID	Intersection	Existing Control	AM		PM	
			Delay	LOS	Delay	LOS
1	Park St & Buena Vista Ave	Signal	25.9	C	20.8	C
2	Park St & Clement Ave	Signal	**>120**	**F**	**>120**	**F**
3	Park St & Blanding Ave	Signal	21.4	C	29.3	C
D	Clement & Existing Site Driveway	Driveway	15.1	C	17.1	C

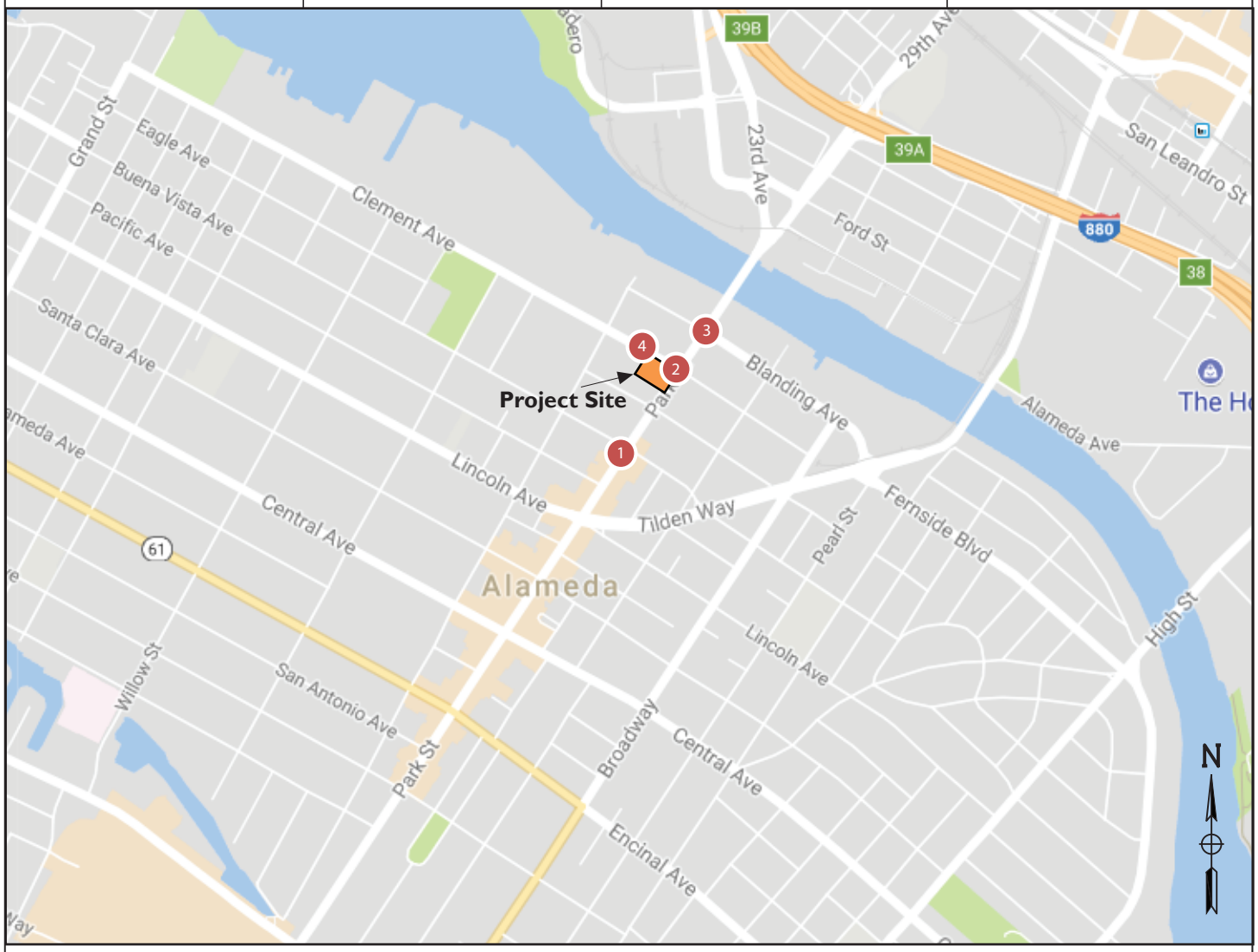
Source: AMG, August 2018

Traffic Impact Study for Proposed 1825 Park Street Hotel in Alameda, CA

2040 Peak Hour Volumes and Lane Configurations

Figure 7





Legend:

- Study Intersection
- Signal Control
- Stop Control
- XX (XX) AM (PM) Peak Hour Vehicle Volumes

Notes:

[1] Vehicle movement to Frontage Road

* Illegal vehicle movement

AMG ADVANCED MOBILITY GROUP

FUTURE (2040) PLUS PROJECT TRAFFIC CONDITION

This section presents the assessment of potential transportation impacts of the proposed project.

INTERSECTION LEVEL OF SERVICE ANALYSIS

Figure 8 shows the 2040 plus Project Conditions peak hour turning movement volumes and lane geometry. Detailed level of service worksheets are provided in **Appendix E**.

Table 10 shows the LOS under 2040 plus Project Conditions. All intersections operate at acceptable LOS D or better, except the Park Street/Clement Avenue intersection. Although the operation is expected to be unacceptable LOS F, the project would contribute less than 3% to traffic volumes at the intersection, which is the threshold for significant impact. Therefore, the project does not have a significant impact in the future year.

Table 10: 2040 plus Project Intersection LOS

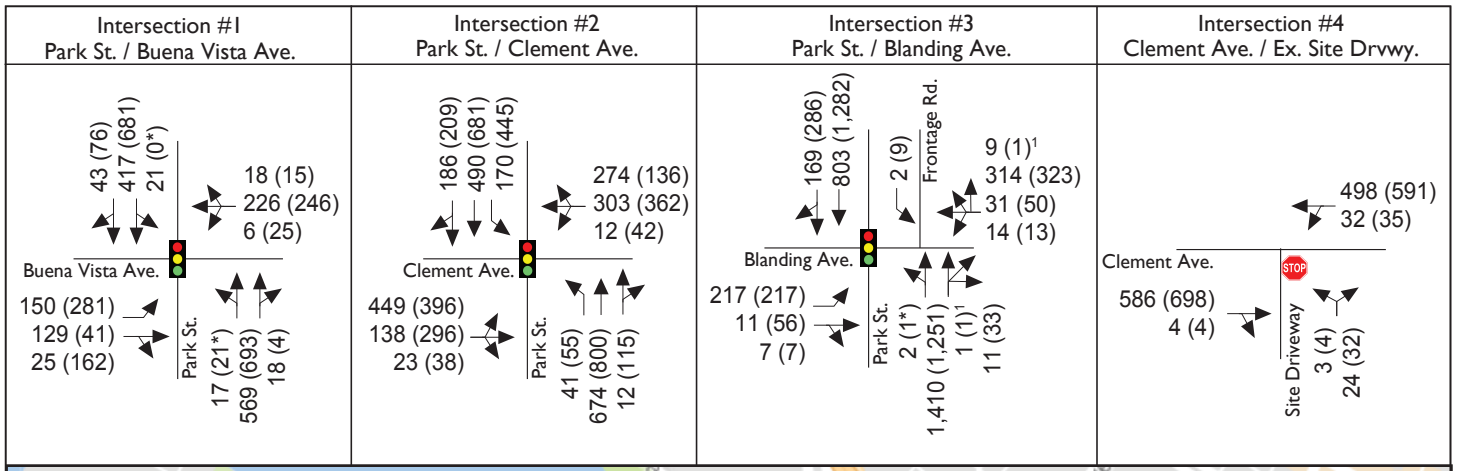
ID	Intersection	Existing Control	2040 plus Project Conditions				AM		PM	
			AM		PM		Proj. Trips	Percent Traffic	Proj. Trips	Percent Traffic
			Delay	LOS	Delay	LOS				
1	Park St & Buena Vista Ave	Signal	25.7	C	20.8	C	15	1%	17	1%
2	Park St & Clement Ave	Signal	**>120**	**F**	**>120**	**F**	46	2%	52	1%
3	Park St & Blanding Ave	Signal	22.2	C	30.6	C	26	1%	29	1%
D	Clement & Existing Site Driveway	Driveway	15.3	C	18.8	C	51	4%	58	3%

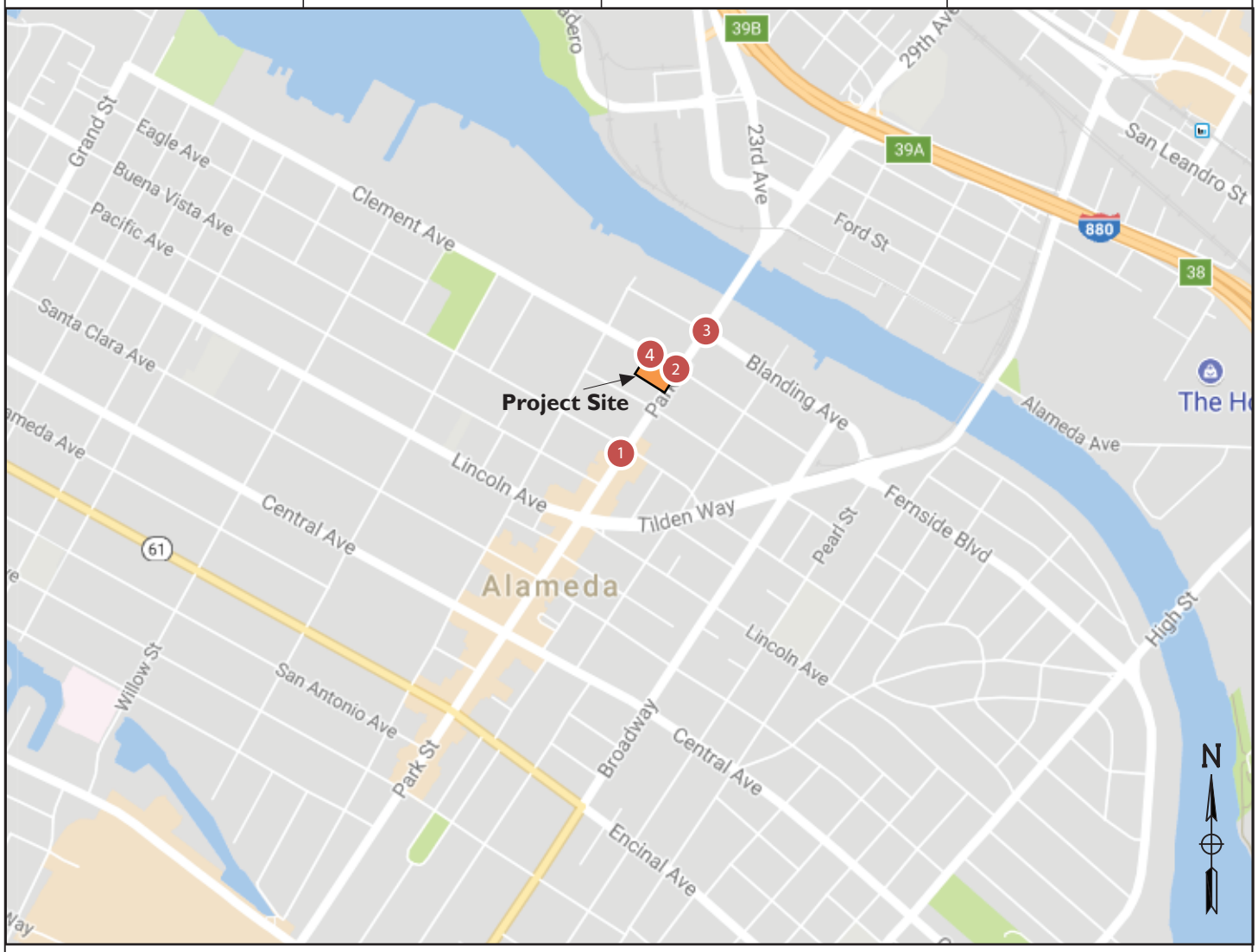
Note: *LOS improvements compared to 2040 conditions are due to optimization of signal timing*

Traffic Impact Study for Proposed 1825 Park Street Hotel in Alameda, CA

2040 Plus Project Peak Hour Volumes and Lane Configurations

Figure 8





Legend:

- Study Intersection
- Signal Control
- Stop Control
- XX (XX) AM (PM) Peak Hour Vehicle Volumes

Notes:

[1] Vehicle movement to Frontage Road

* Illegal vehicle movement

AMG ADVANCED MOBILITY GROUP

CONCLUSIONS

Based on the results of the analysis, the following is a summary of our findings:

Existing Conditions

- Based on discussions with City and agency staff, four study intersections were selected for analysis.
- All the study intersections operate at acceptable LOS D or better.
- The on-street parking survey indicates that approximately 50% of the 253 on-street parking spaces in the area are occupied during the evening peak period.

Existing plus Project Conditions

- It is estimated that the project will generate approximately 51 Project generated trips during the AM peak hour and 58 Project generated trips during the PM peak hour.
- Similar to the Existing Conditions, all the intersections operate at acceptable LOS D or better, except the following intersection:
  - Park Street and Clement Avenue during the AM peak hour. Project traffic contributes 46 trips (approximately two percent) to this intersection. However, this intersection is under design for signal improvements, which would include signal timing. With modified signal timing, the intersection would operate at acceptable LOS D.
- In the event of a long eastbound left turn queue at Clement Avenue/Park Street, there is potential for the queue to temporarily block the proposed driveway. In the event that this is observed, AMG recommends installing "Keep Clear" pavement markings on Clement Avenue.
- AMG does not anticipate circulation problems within the parking lot.
- It is estimated that the project will generate demand for approximately 38 parking spaces on a weekday and 62 spaces on a weekend day for the peak parking hour.
- The Project proposes to provide sufficient bicycle parking spaces as specified in the code.

Future (2040) Conditions

- All the intersections operate at acceptable LOS D or better, except Park Street and Clement Avenue during both the AM and PM peak hours.

2040 plus Project Conditions

- Similar to the Future (2040) Conditions, all the intersections operate at acceptable LOS D or better, except Park Street and Clement Avenue during both the AM and PM peak hours.
- However, because the project is expected to contribute less than 3% traffic to the intersection, it does not cause a significant impact.

Appendix A **TRAFFIC VOLUME COUNTS**

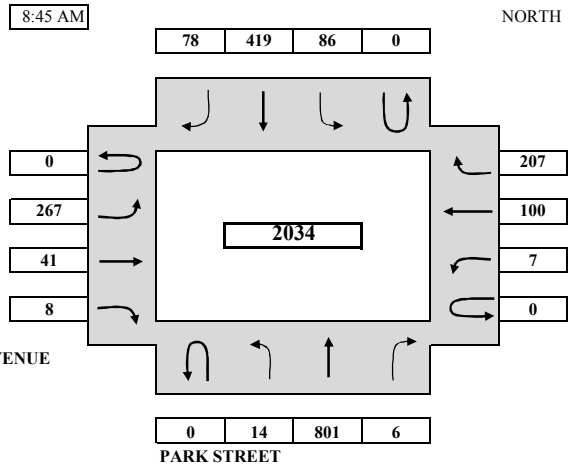
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TURNING MOVEMENT SUMMARY

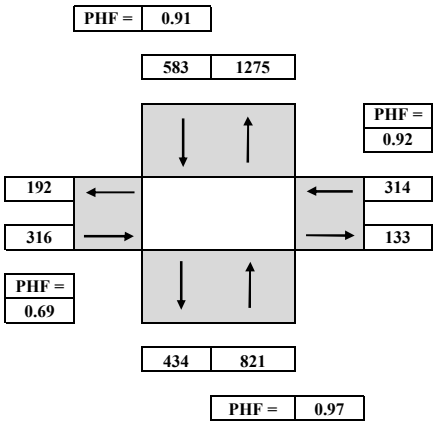
PROJECT:	**1825 PARK STREET HOTEL TRAFFIC STUDY**	**SURVEY DATE:**	**8/23/2017**	**DAY:**	**WEDNESDAY**
N-S APPROACH:	**PARK STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**CLEMENT AVENUE**	**JURISDICTION:**	**ALAMEDA**	**FILE:**	**3708049-1AM**

PEAK HOUR
7:45 AM to 8:45 AM

NORTH



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND U-TURN	LEFT	THRU	RIGHT	SOUTHBOUND U-TURN	LEFT	THRU	RIGHT	EASTBOUND U-TURN	LEFT	THRU	RIGHT	WESTBOUND U-TURN	LEFT	THRU	RIGHT	TOTAL
SURVEY DATA																		
7:00 AM	7:15 AM		1	138	0		18	84	18		53	6	0		3	16	29	**366**
7:15 AM	7:30 AM		2	301	0		29	183	38		110	14	0		4	42	64	**787**
7:30 AM	7:45 AM		2	515	1		45	281	55		184	19	2		4	59	112	**1279**
7:45 AM	8:00 AM		4	724	2		71	389	75		212	26	4		4	86	160	**1757**
8:00 AM	8:15 AM		4	922	2		91	491	98		317	35	5		5	112	211	**2293**
8:15 AM	8:30 AM		9	1123	6		107	579	118		384	46	8		9	136	268	**2793**
8:30 AM	8:45 AM		16	1316	7		131	700	133		451	60	10		11	159	319	**3313**
8:45 AM	9:00 AM		18	1473	11		157	795	153		512	74	11		13	181	358	**3756**
TOTAL BY PERIOD																		
7:00 AM	7:15 AM	0	1	138	0	0	18	84	18	0	53	6	0	0	3	16	29	**366**
7:15 AM	7:30 AM	0	1	163	0	0	11	99	20	0	57	8	0	0	1	26	35	**421**
7:30 AM	7:45 AM	0	0	214	1	0	16	98	17	0	74	5	2	0	0	17	48	**492**
7:45 AM	8:00 AM	0	2	209	1	0	26	108	20	0	28	7	2	0	0	27	48	**478**
8:00 AM	8:15 AM	0	0	198	0	0	20	102	23	0	105	9	1	0	1	26	51	**536**
8:15 AM	8:30 AM	0	5	201	4	0	16	88	20	0	67	11	3	0	4	24	57	**500**
8:30 AM	8:45 AM	0	7	193	1	0	24	121	15	0	67	14	2	0	2	23	51	**520**
8:45 AM	9:00 AM	0	2	157	4	0	26	95	20	0	61	14	1	0	2	22	39	**443**
HOURLY TOTALS																		
7:00 AM	8:00 AM	0	4	724	2	0	71	389	75	0	212	26	4	0	4	86	160	**1757**
7:15 AM	8:15 AM	0	3	784	2	0	73	407	80	0	264	29	5	0	2	96	182	**1927**
7:30 AM	8:30 AM	0	7	822	6	0	78	396	80	0	274	32	8	0	5	94	204	**2006**
7:45 AM	8:45 AM	0	14	801	6	0	86	419	78	0	267	41	8	0	7	100	207	**2034**
8:00 AM	9:00 AM	0	14	749	9	0	86	406	78	0	300	48	7	0	9	95	198	**1999**

PEAK HOUR SUMMARY

7:45 AM to 8:45 AM	NORTHBOUND NBU	NBL	NBT	NBR	SOUTHBOUND SBU	SBL	SBT	SBR	EASTBOUND EBU	EBL	EBT	EBR	WESTBOUND WBU	WBL	WBT	WBR	TOTAL
VOLUME	0	14	801	6	0	86	419	78	0	267	41	8	0	7	100	207	**2034**
PHF BY MOVEMENT	0.00	0.50	0.96	0.38	0.00	0.83	0.87	0.85	0.00	0.64	0.73	0.67	0.00	0.44	0.93	0.91	OVERALL
PHF BY APPROACH	0.97				0.91				0.69				0.92				0.95

TRUCK	NORTHBOUND IN	NORTHBOUND OUT	SOUTHBOUND IN	SOUTHBOUND OUT	EASTBOUND IN	EASTBOUND OUT	WESTBOUND IN	WESTBOUND OUT	OVERALL
TRUCK VOLUMES	13	19	13	9	8	6	6	6	**40**
TRUCK PERCENTAGE	1.6%	1.5%	2.2%	2.1%	2.5%	4.5%	1.9%	3.1%	**2.0%**
TRANSIT VOLUMES	5	4	0	0	9	0	0	0	**9**
TRANSIT PERCENTAGE	0.6%	0.7%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	**0.4%**
BICYCLE	0		0		2		1		**3**
PEDESTRIAN BY DIR	9		14		3		3		**29**
	N-LEG		**S-LEG**		**E-LEG**		**W-LEG**		
PEDESTRIAN BY LEG	5		1		11		12		**29**

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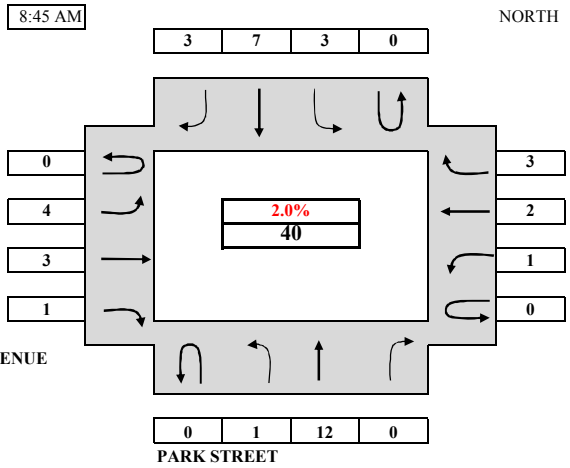
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TRUCK TURNING MOVEMENT SUMMARY

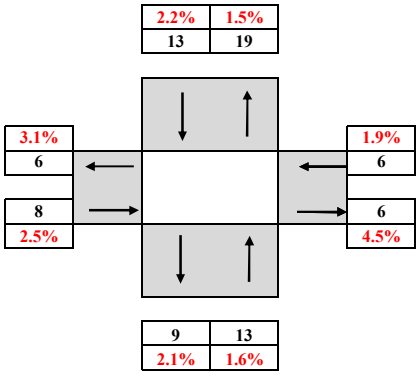
PROJECT:	**1825 PARK STREET HOTEL TRAFFIC STUDY**	**SURVEY DATE:**	**8/23/2017**	**DAY:**	**WEDNESDAY**
N-S APPROACH:	**PARK STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**CLEMENT AVENUE**	**JURISDICTION:**	**ALAMEDA**	**FILE:**	**3708049-1AM**

PEAK HOUR
7:45 AM to 8:45 AM

NORTH



TRUCK ARRIVAL / DEPARTURE VOLUMES & PERCENTAGE (TOTAL TRUCK PERCENTAGE IN RED)



TIME From	PERIOD To	NORTHBOUND U-TURN	NORTHBOUND LEFT	NORTHBOUND THRU	NORTHBOUND RIGHT	SOUTHBOUND U-TURN	SOUTHBOUND LEFT	SOUTHBOUND THRU	SOUTHBOUND RIGHT	EASTBOUND U-TURN	EASTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	WESTBOUND U-TURN	WESTBOUND LEFT	WESTBOUND THRU	WESTBOUND RIGHT	TOTAL
SURVEY DATA																		
7:00 AM	7:15 AM	0	0	0	0	0	3	4	0	0	1	0	0	0	1	0	1	**10**
7:15 AM	7:30 AM	0	0	3	0	0	4	6	0	0	3	1	0	0	1	0	1	**19**
7:30 AM	7:45 AM	0	0	4	0	0	6	7	1	0	3	1	0	0	1	1	1	**25**
7:45 AM	8:00 AM	0	0	6	0	0	7	8	4	0	3	1	0	0	1	2	2	**34**
8:00 AM	8:15 AM	0	0	11	0	0	8	9	4	0	6	3	0	0	2	3	3	**49**
8:15 AM	8:30 AM	0	0	14	0	0	8	12	4	0	6	4	1	0	2	3	3	**57**
8:30 AM	8:45 AM	0	1	16	0	0	9	14	4	0	7	4	1	0	2	3	4	**65**
8:45 AM	9:00 AM	0	1	18	0	0	9	16	5	0	7	4	1	0	2	3	4	**70**
TOTAL BY PERIOD																		
7:00 AM	7:15 AM	0	0	0	0	0	3	4	0	0	1	0	0	0	1	0	1	**10**
7:15 AM	7:30 AM	0	0	3	0	0	1	2	0	0	2	1	0	0	0	0	0	**9**
7:30 AM	7:45 AM	0	0	1	0	0	2	1	1	0	0	0	0	0	0	1	0	**6**
7:45 AM	8:00 AM	0	0	2	0	0	1	1	3	0	0	0	0	0	0	1	1	**9**
8:00 AM	8:15 AM	0	0	5	0	0	1	1	0	0	3	2	0	0	1	1	1	**15**
8:15 AM	8:30 AM	0	0	3	0	0	0	3	0	0	0	1	1	0	0	0	0	**8**
8:30 AM	8:45 AM	0	1	2	0	0	1	2	0	0	1	0	0	0	0	0	1	**8**
8:45 AM	9:00 AM	0	0	2	0	0	0	2	1	0	0	0	0	0	0	0	0	**5**
HOURLY TOTALS																		
7:00 AM	8:00 AM	0	0	6	0	0	7	8	4	0	3	1	0	0	1	2	2	**34**
7:15 AM	8:15 AM	0	0	11	0	0	5	5	4	0	5	3	0	0	1	3	2	**39**
7:30 AM	8:30 AM	0	0	11	0	0	4	6	4	0	3	3	1	0	1	3	2	**38**
7:45 AM	8:45 AM	0	1	12	0	0	3	7	3	0	4	3	1	0	1	2	3	**40**
8:00 AM	9:00 AM	0	1	12	0	0	2	8	1	0	4	3	1	0	1	1	2	**36**

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7:45 AM to 8:45 AM

DIRECTION	NB IN	NB OUT	SB IN	SB OUT	EB IN	EB OUT	WB IN	WB OUT	OVERALL INTERSECTION
TRUCK VOLUMES	13	19	13	9	8	6	6	6	40
TRUCK PERCENTAGE	1.6%	1.5%	2.2%	2.1%	2.5%	4.5%	1.9%	3.1%	2.0%

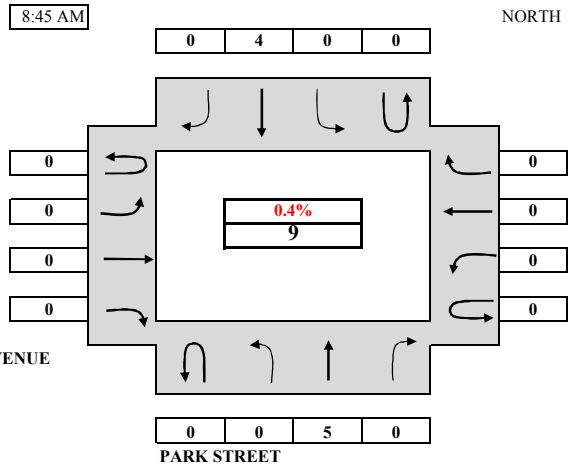
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TRANSIT TURNING MOVEMENT SUMMARY

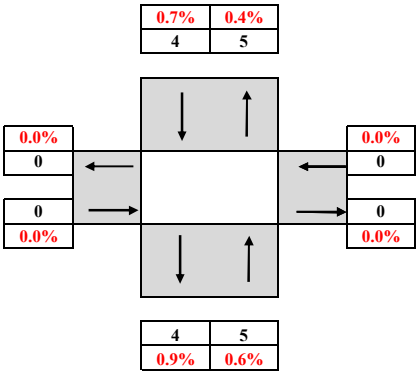
T:	1825 PARK STREET HOTEL TRAFFIC STUDY	SURVEY DATE:	8/23/2017	DAY:	WEDNESDAY
ROACH:	PARK STREET	SURVEY TIME:	7:00 AM	TO	9:00 AM
PROACH:	CLEMENT AVENUE	JURISDICTION:	ALAMEDA	FILE:	3708049-1AM

AK HOUR
to 8:45 AM

NORTH



TRANSIT ARRIVAL / DEPARTURE
VOLUMES & PERCENTAGE
(TOTAL TRANSIT PERCENTAGE IN RED)



PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
to 7:15 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	**2**
to 7:30 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	**4**
to 7:45 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	**6**
to 8:00 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	**8**
to 8:15 AM	0	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	**11**
to 8:30 AM	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	**12**
to 8:45 AM	0	0	8	0	0	0	7	0	0	0	0	0	0	0	0	0	**15**
to 9:00 AM	0	0	8	0	0	0	7	0	0	0	0	0	0	0	0	0	**15**
TOTAL BY PERIOD																	
to 7:15 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	**2**
to 7:30 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	**2**
to 7:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	**2**
to 8:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	**2**
to 8:15 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	**3**
to 8:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
to 8:45 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	**3**
to 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
HOURLY TOTALS																	
to 8:00 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	**8**
to 8:15 AM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	**9**
to 8:30 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	**8**
to 8:45 AM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	**9**
to 9:00 AM	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	**7**

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to 8:45 AM

RECTION	NB		SB		EB		WB		OVERALL
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	INTERSECTION
K VOLUMES	5	5	4	4	0	0	0	0	9
PERCENTAGE	0.6%	0.4%	0.7%	0.9%	0.0%	0.0%	0.0%	0.0%	0.4%

PROJECT:
N-S APPROACH:
E-W APPROACH:

PEAK HOU
7:45 AM TO

WEST - LEG
1
1
0

CLEMENT AVENU

TIME	PER
From	
7:00 AM	to
7:15 AM	to
7:30 AM	to
7:45 AM	to
8:00 AM	to
8:15 AM	to
8:30 AM	to
8:45 AM	to
7:00 AM	to
7:15 AM	to
7:30 AM	to
7:45 AM	to
8:00 AM	to
8:15 AM	to
8:30 AM	to
8:45 AM	to
7:00 AM	to
7:15 AM	to
7:30 AM	to
7:45 AM	to
8:00 AM	to

7:45 AM to
VOLUME BY APPR
BICYCLE

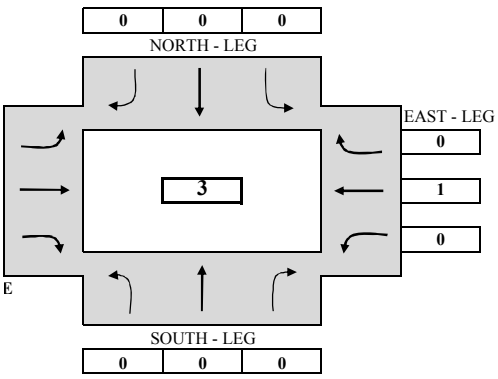
B.A.Y.M.E.T.R.I.C.S.

BICYCLE MOVEMENT SUMMARY

1825 PARK STREET HOTEL TRAFFIC STUDY	SURVEY DATE:	8/23/2017	DAY:	WEDNESDAY
PARK STREET	SURVEY TIME:	7:00 AM	TO	9:00 AM
CLEMENT AVENUE	JURISDICTION:	ALAMEDA	FILE:	3708049-1AM

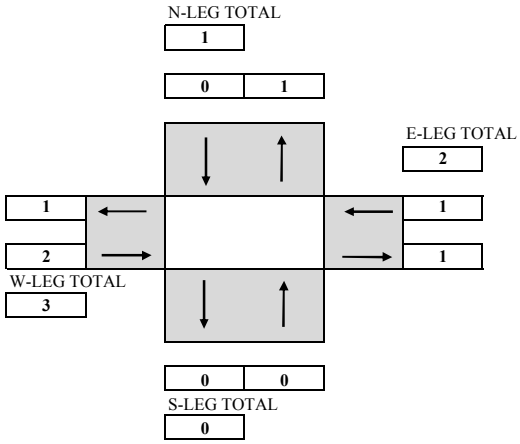
R
8:45 AM

NORTH



PARK STREET

ARRIVAL / DEPARTURE VOLUMES



RIOD	NB (SOUTH - LEG)			SB (NORTH - LEG)			EB (WEST - LEG)			WB (EAST - LEG)			TOTAL
To	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
SURVEY DATA													
7:15 AM	0	0	0	0	0	1	1	0	1	0	0	0	**3**
7:30 AM	0	0	0	0	0	1	1	0	1	0	0	0	**3**
7:45 AM	0	0	1	0	0	1	1	1	1	0	0	0	**5**
8:00 AM	0	0	1	0	0	1	2	1	1	0	1	0	**7**
8:15 AM	0	0	1	0	0	1	2	2	1	0	1	0	**8**
8:30 AM	0	0	1	0	0	1	2	2	1	0	1	0	**8**
8:45 AM	0	0	1	0	0	1	2	2	1	0	1	0	**8**
9:00 AM	0	1	1	0	0	1	3	2	1	0	1	0	**10**
TOTAL BY PERIOD													
7:15 AM	0	0	0	0	0	1	1	0	1	0	0	0	**3**
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:45 AM	0	0	1	0	0	0	0	1	0	0	0	0	**2**
8:00 AM	0	0	0	0	0	0	1	0	0	0	1	0	**2**
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	**1**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	1	0	0	0	0	1	0	0	0	0	0	**2**
HOURLY TOTALS													
8:00 AM	0	0	1	0	0	1	2	1	1	0	1	0	**7**
8:15 AM	0	0	1	0	0	0	1	2	0	0	1	0	**5**
8:30 AM	0	0	1	0	0	0	1	2	0	0	1	0	**5**
8:45 AM	0	0	0	0	0	0	1	1	0	0	1	0	**3**
9:00 AM	0	1	0	0	0	0	1	1	0	0	0	0	**3**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

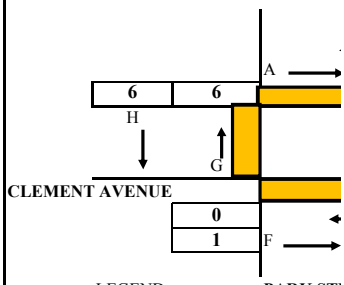
8:45 AM					
DACH	NBT	SBT	EBT	WBT	TOTAL
	0	0	2	1	**3**

B.A.Y

PEDESTRIA

PROJECT:	1825 PARK STREE
N-S APPROACH:	PARK STREET
E-W APPROACH:	CLEMENT AVENU
SURVEY PERIOD:	7:00 AM

PEAK HOUR
07:45 AM TO 08:45 AM PARK ST



LEGEND:
- CROSSWALK
- SIDEWALK
- STOP CONTROL LINE
- STOP
- * J-WALK IN RED

TIME PERIOD			NORTH
From		To	A
07:00 AM	---	07:15 AM	0
07:15 AM	---	07:30 AM	0
07:30 AM	---	07:45 AM	0
07:45 AM	---	08:00 AM	1
08:00 AM	---	08:15 AM	2
08:15 AM	---	08:30 AM	2
08:30 AM	---	08:45 AM	2
08:45 AM	---	09:00 AM	2
07:00 AM	---	07:15 AM	0
07:15 AM	---	07:30 AM	0
07:30 AM	---	07:45 AM	0
07:45 AM	---	08:00 AM	1
08:00 AM	---	08:15 AM	1
08:15 AM	---	08:30 AM	0
08:30 AM	---	08:45 AM	0
08:45 AM	---	09:00 AM	0
07:00 AM	---	08:00 AM	1
07:15 AM	---	08:15 AM	2
07:30 AM	---	08:30 AM	2
07:45 AM	---	08:45 AM	2
08:00 AM	---	09:00 AM	1

Tel : (510) 232-

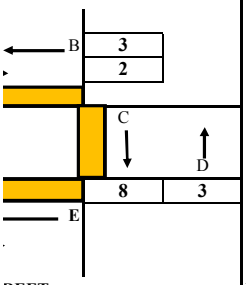
7:45 AM	to	8:45 AM
VOLUME BY DIRECTION		NB
PEDESTRIAN		9
VOLUME BY LEG		N-LEG
PEDESTRIAN		5

.M.E.T.R.I.C.S.

AN MOVEMENT SUMMARY

T HOTEL TRAFFIC STUDY		SURVEY DATE:	8/23/2017
		DAY:	WEDNESDAY
JE		JURISDICTION:	ALAMEDA
TO	9:00 AM	FILE:	3708049-1AM

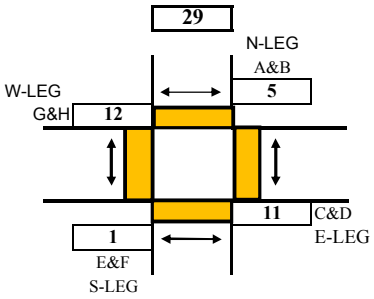
REET



REET

E

PEAK HOUR
TOTAL PEDESTRIAN VOLUMES



BY LEG:		BY DIRECTION:	
N-LEG	5	NB(D+G)	9
S-LEG	1	SB(C+H)	14
E-LEG	11	EB(A+F)	3
W-LEG	12	WB(B+E)	3

X-WALK	EAST X-WALK		SOUTH X-WALK		WEST X-WALK		
B	*C*	*D*	*E*	*F*	*G*	*H*	*TOTAL*
SURVEY DATA							
0	2	0	1	0	1	0	*4*
0	2	0	1	0	2	1	*6*
0	3	1	3	1	3	3	*14*
0	6	2	3	1	4	3	*20*
2	6	2	3	2	7	3	*27*
2	9	2	3	2	8	8	*36*
3	11	4	3	2	9	9	*43*
4	11	6	4	3	10	10	*50*
TOTAL BY PERIOD							
0	2	0	1	0	1	0	*4*
0	0	0	0	0	1	1	*2*
0	1	1	2	1	1	2	*8*
0	3	1	0	0	1	0	*6*
2	0	0	0	1	3	0	*7*
0	3	0	0	0	1	5	*9*
1	2	2	0	0	1	1	*7*
1	0	2	1	1	1	1	*7*
HOURLY TOTALS							
0	6	2	3	1	4	3	*20*
2	4	2	2	2	6	3	*23*
2	7	2	2	2	6	7	*30*
3	8	3	0	1	6	6	*29*
4	5	4	1	2	6	7	*30*

-1271 *Fax: (510) 232-1272*

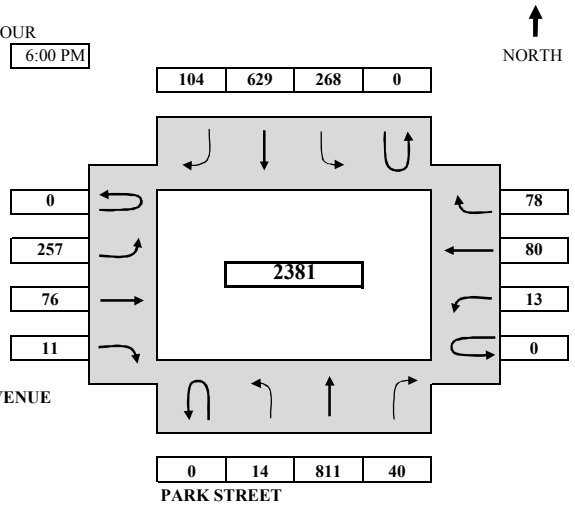
SB	EB	WB	TOTAL
14	3	3	**29**
S-LEG	E-LEG	W-LEG	TOTAL
1	11	12	**29**

B.A.Y.M.E.T.R.I.C.S.

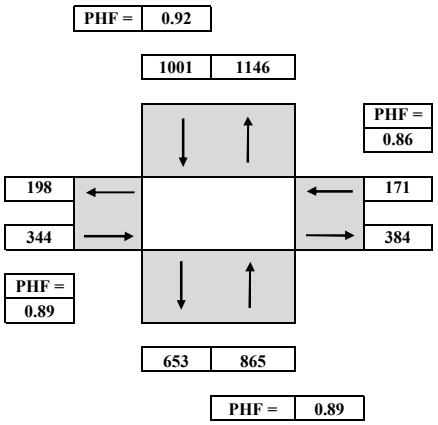
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	**1825 PARK STREET HOTEL TRAFFIC STUDY**	**SURVEY DATE:**	**8/23/2017**	**DAY:**	**WEDNESDAY**
N-S APPROACH:	**PARK STREET**	**SURVEY TIME:**	**4:00 PM**	**TO**	**6:00 PM**
E-W APPROACH:	**CLEMENT AVENUE**	**JURISDICTION:**	**ALAMEDA**	**FILE:**	**3708049-1PM**

PEAK HOUR
5:00 PM to 6:00 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND U-TURN	LEFT	THRU	RIGHT	SOUTHBOUND U-TURN	LEFT	THRU	RIGHT	EASTBOUND U-TURN	LEFT	THRU	RIGHT	WESTBOUND U-TURN	LEFT	THRU	RIGHT	TOTAL
SURVEY DATA																		
4:00 PM	4:15 PM		4	182	5		34	148	26		67	23	2		2	13	19	**525**
4:15 PM	4:30 PM		7	380	12		90	291	45		142	36	3		4	29	38	**1077**
4:30 PM	4:45 PM		9	562	19		139	431	65		204	51	8		10	46	58	**1602**
4:45 PM	5:00 PM		13	715	27		186	601	85		261	69	12		13	60	70	**2112**
5:00 PM	5:15 PM		16	932	38		251	762	120		333	89	17		14	76	95	**2743**
5:15 PM	5:30 PM		22	1158	49		314	907	142		406	109	18		22	95	118	**3360**
5:30 PM	5:45 PM		24	1345	62		382	1056	164		464	130	22		23	119	132	**3923**
5:45 PM	6:00 PM		27	1526	67		454	1230	189		518	145	23		26	140	148	**4493**
TOTAL BY PERIOD																		
4:00 PM	4:15 PM	0	4	182	5	0	34	148	26	0	67	23	2	0	2	13	19	**525**
4:15 PM	4:30 PM	0	3	198	7	0	56	143	19	0	75	13	1	0	2	16	19	**552**
4:30 PM	4:45 PM	0	2	182	7	0	49	140	20	0	62	15	5	0	6	17	20	**525**
4:45 PM	5:00 PM	0	4	153	8	0	47	170	20	0	57	18	4	0	3	14	12	**510**
5:00 PM	5:15 PM	0	3	217	11	0	65	161	35	0	72	20	5	0	1	16	25	**631**
5:15 PM	5:30 PM	0	6	226	11	0	63	145	22	0	73	20	1	0	8	19	23	**617**
5:30 PM	5:45 PM	0	2	187	13	0	68	149	22	0	58	21	4	0	1	24	14	**563**
5:45 PM	6:00 PM	0	3	181	5	0	72	174	25	0	54	15	1	0	3	21	16	**570**
HOURLY TOTALS																		
4:00 PM	5:00 PM	0	13	715	27	0	186	601	85	0	261	69	12	0	13	60	70	**2112**
4:15 PM	5:15 PM	0	12	750	33	0	217	614	94	0	266	66	15	0	12	63	76	**2218**
4:30 PM	5:30 PM	0	15	778	37	0	224	616	97	0	264	73	15	0	18	66	80	**2283**
4:45 PM	5:45 PM	0	15	783	43	0	243	625	99	0	260	79	14	0	13	73	74	**2321**
5:00 PM	6:00 PM	0	14	811	40	0	268	629	104	0	257	76	11	0	13	80	78	**2381**

PEAK HOUR SUMMARY

5:00 PM to 6:00 PM	NORTHBOUND NBU	NBL	NBT	NBR	SOUTHBOUND SBU	SBL	SBT	SBR	EASTBOUND EBU	EBL	EBT	EBR	WESTBOUND WBU	WBL	WBT	WBR	TOTAL
VOLUME	0	14	811	40	0	268	629	104	0	257	76	11	0	13	80	78	**2381**
PHF BY MOVEMENT	0.00	0.58	0.90	0.77	0.00	0.93	0.90	0.74	0.00	0.88	0.90	0.55	0.00	0.41	0.83	0.78	OVERALL
PHF BY APPROACH	0.89				0.92				0.89				0.86				0.94

TRUCK	IN	OUT	IN	OUT	IN	OUT	IN	OUT	OVERALL
TRUCK VOLUMES	6	6	6	4	4	4	3	5	**19**
TRUCK PERCENTAGE	0.7%	0.5%	0.6%	0.6%	1.2%	1.0%	1.8%	2.5%	**0.8%**
TRANSIT VOLUMES	1	8	0	0	9	0	0	0	**9**
TRANSIT PERCENTAGE	0.1%	0.8%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	**0.4%**
BICYCLE	0		0		0		1		**1**
PEDESTRIAN BY DIR	38		54		17		11		**120**
	N-LEG		**S-LEG**		**E-LEG**		**W-LEG**		
PEDESTRIAN BY LEG	5		23		62		30		**120**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

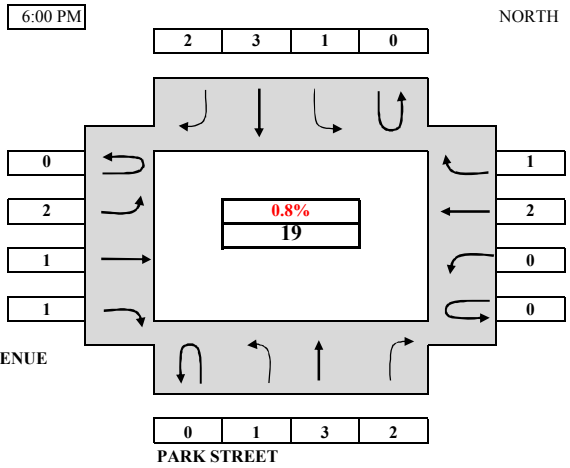
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TRUCK TURNING MOVEMENT SUMMARY

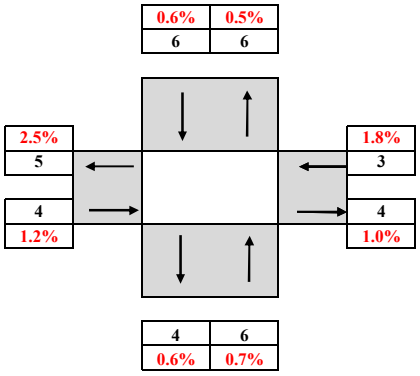
PROJECT:	**1825 PARK STREET HOTEL TRAFFIC STUDY**	**SURVEY DATE:**	**8/23/2017**	**DAY:**	**WEDNESDAY**
N-S APPROACH:	**PARK STREET**	**SURVEY TIME:**	**4:00 PM**	**TO**	**6:00 PM**
E-W APPROACH:	**CLEMENT AVENUE**	**JURISDICTION:**	**ALAMEDA**	**FILE:**	**3708049-1PM**

PEAK HOUR
5:00 PM to 6:00 PM

NORTH



TRUCK ARRIVAL / DEPARTURE VOLUMES & PERCENTAGE (TOTAL TRUCK PERCENTAGE IN RED)



TIME From	PERIOD To	NORTHBOUND U-TURN	NORTHBOUND LEFT	NORTHBOUND THRU	NORTHBOUND RIGHT	SOUTHBOUND U-TURN	SOUTHBOUND LEFT	SOUTHBOUND THRU	SOUTHBOUND RIGHT	EASTBOUND U-TURN	EASTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	WESTBOUND U-TURN	WESTBOUND LEFT	WESTBOUND THRU	WESTBOUND RIGHT	TOTAL
SURVEY DATA																		
4:00 PM	4:15 PM	0	0	2	0	0	0	4	0	0	2	2	0	0	0	0	1	**11**
4:15 PM	4:30 PM	0	0	3	0	0	0	4	2	0	6	3	0	0	0	1	1	**20**
4:30 PM	4:45 PM	0	0	5	0	0	0	4	3	0	7	4	0	0	0	1	1	**25**
4:45 PM	5:00 PM	0	0	7	0	0	0	4	3	0	9	4	0	0	0	1	1	**29**
5:00 PM	5:15 PM	0	0	7	1	0	1	4	3	0	9	4	0	0	0	2	1	**32**
5:15 PM	5:30 PM	0	1	10	2	0	1	6	5	0	10	5	0	0	0	3	1	**44**
5:30 PM	5:45 PM	0	1	10	2	0	1	6	5	0	11	5	1	0	0	3	1	**46**
5:45 PM	6:00 PM	0	1	10	2	0	1	7	5	0	11	5	1	0	0	3	2	**48**
TOTAL BY PERIOD																		
4:00 PM	4:15 PM	0	0	2	0	0	0	4	0	0	2	2	0	0	0	0	1	**11**
4:15 PM	4:30 PM	0	0	1	0	0	0	0	2	0	4	1	0	0	0	1	0	**9**
4:30 PM	4:45 PM	0	0	2	0	0	0	0	1	0	1	1	0	0	0	0	0	**5**
4:45 PM	5:00 PM	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	**4**
5:00 PM	5:15 PM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	**3**
5:15 PM	5:30 PM	0	1	3	1	0	0	2	2	0	1	1	0	0	0	1	0	**12**
5:30 PM	5:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	**2**
5:45 PM	6:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	**2**
HOURLY TOTALS																		
4:00 PM	5:00 PM	0	0	7	0	0	0	4	3	0	9	4	0	0	0	1	1	**29**
4:15 PM	5:15 PM	0	0	5	1	0	1	0	3	0	7	2	0	0	0	2	0	**21**
4:30 PM	5:30 PM	0	1	7	2	0	1	2	3	0	4	2	0	0	0	2	0	**24**
4:45 PM	5:45 PM	0	1	5	2	0	1	2	2	0	4	1	1	0	0	2	0	**21**
5:00 PM	6:00 PM	0	1	3	2	0	1	3	2	0	2	1	1	0	0	2	1	**19**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

5:00 PM to 6:00 PM

DIRECTION	NB IN	NB OUT	SB IN	SB OUT	EB IN	EB OUT	WB IN	WB OUT	OVERALL INTERSECTION
TRUCK VOLUMES	6	6	6	4	4	4	3	5	19
TRUCK PERCENTAGE	0.7%	0.5%	0.6%	0.6%	1.2%	1.0%	1.8%	2.5%	0.8%

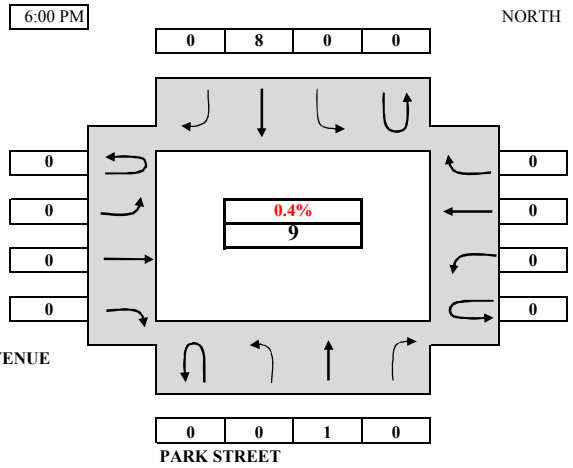
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TRANSIT TURNING MOVEMENT SUMMARY

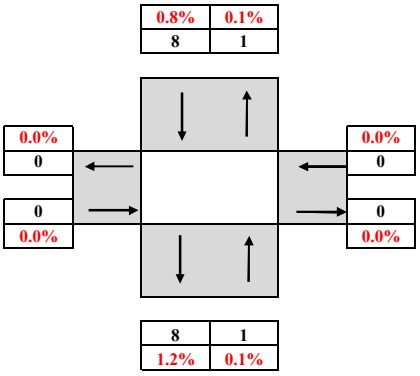
T:	1825 PARK STREET HOTEL TRAFFIC STUDY	SURVEY DATE:	8/23/2017	DAY:	WEDNESDAY
ROACH:	PARK STREET	SURVEY TIME:	4:00 PM	TO	6:00 PM
PROACH:	CLEMENT AVENUE	JURISDICTION:	ALAMEDA	FILE:	3708049-1PM

AK HOUR
to 6:00 PM

NORTH



TRANSIT ARRIVAL / DEPARTURE
VOLUMES & PERCENTAGE
(TOTAL TRANSIT PERCENTAGE IN RED)



PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
to 4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
to 4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	**2**
to 4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	**2**
to 5:00 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	**5**
to 5:15 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	**5**
to 5:30 PM	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	**9**
to 5:45 PM	0	0	1	0	0	0	10	0	0	0	0	0	0	0	0	0	**11**
to 6:00 PM	0	0	1	0	0	0	13	0	0	0	0	0	0	0	0	0	**14**
TOTAL BY PERIOD																	
to 4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
to 4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
to 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
to 5:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	**3**
to 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
to 5:30 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	**4**
to 5:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	**2**
to 6:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	**3**
HOURLY TOTALS																	
to 5:00 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	**5**
to 5:15 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	**4**
to 5:30 PM	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	**7**
to 5:45 PM	0	0	1	0	0	0	8	0	0	0	0	0	0	0	0	0	**9**
to 6:00 PM	0	0	1	0	0	0	8	0	0	0	0	0	0	0	0	0	**9**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

to 6:00 PM

RECTION	NB		SB		EB		WB		OVERALL
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	INTERSECTION
K VOLUMES	1	1	8	8	0	0	0	0	9
PERCENTAGE	0.1%	0.1%	0.8%	1.2%	0.0%	0.0%	0.0%	0.0%	0.4%

PROJECT:
N-S APPROACH:
E-W APPROACH:

PEAK HOU
5:00 PM TO

WEST - LEG
0
0
0

CLEMENT AVENU

TIME	PER
From	
4:00 PM	to
4:15 PM	to
4:30 PM	to
4:45 PM	to
5:00 PM	to
5:15 PM	to
5:30 PM	to
5:45 PM	to
4:00 PM	to
4:15 PM	to
4:30 PM	to
4:45 PM	to
5:00 PM	to
5:15 PM	to
5:30 PM	to
5:45 PM	to
4:00 PM	to
4:15 PM	to
4:30 PM	to
4:45 PM	to
5:00 PM	to

5:00 PM to
VOLUME BY APPR
BICYCLE

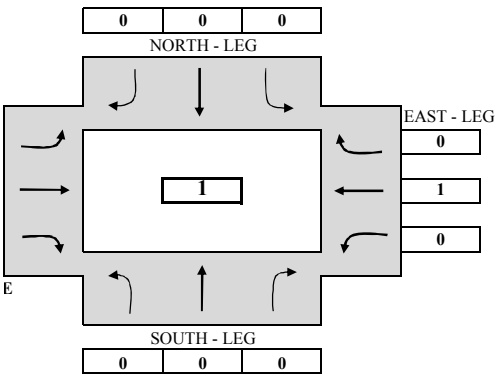
B.A.Y.M.E.T.R.I.C.S.

BICYCLE MOVEMENT SUMMARY

1825 PARK STREET HOTEL TRAFFIC STUDY	SURVEY DATE:	8/23/2017	DAY:	WEDNESDAY
PARK STREET	SURVEY TIME:	4:00 PM	TO	6:00 PM
CLEMENT AVENUE	JURISDICTION:	ALAMEDA	FILE:	3708049-1PM

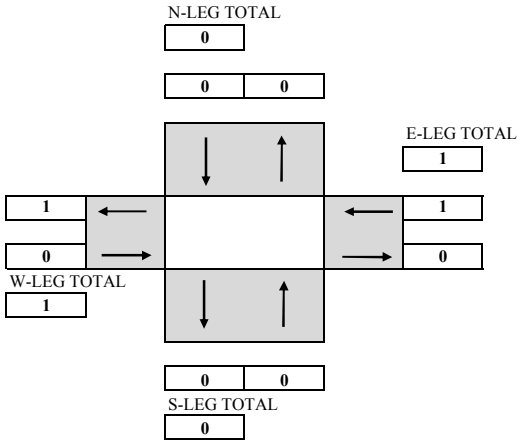
R
6:00 PM

NORTH



PARK STREET

ARRIVAL / DEPARTURE VOLUMES



RIOD	NB (SOUTH - LEG)			SB (NORTH - LEG)			EB (WEST - LEG)			WB (EAST - LEG)			TOTAL
To	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
SURVEY DATA													
4:15 PM	0	2	0	0	0	0	0	0	0	0	1	0	**3**
4:30 PM	0	2	0	0	0	0	0	0	0	1	1	0	**4**
4:45 PM	0	2	0	0	0	0	0	1	1	1	1	0	**6**
5:00 PM	0	2	0	0	0	0	0	1	1	1	1	0	**6**
5:15 PM	0	2	0	0	0	0	0	1	1	1	1	0	**6**
5:30 PM	0	2	0	0	0	0	0	1	1	1	1	0	**6**
5:45 PM	0	2	0	0	0	0	0	1	1	1	1	0	**6**
6:00 PM	0	2	0	0	0	0	0	1	1	1	2	0	**7**
TOTAL BY PERIOD													
4:15 PM	0	2	0	0	0	0	0	0	0	0	1	0	**3**
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	**1**
4:45 PM	0	0	0	0	0	0	0	1	1	0	0	0	**2**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	**1**
HOURLY TOTALS													
5:00 PM	0	2	0	0	0	0	0	1	1	1	1	0	**6**
5:15 PM	0	0	0	0	0	0	0	1	1	1	0	0	**3**
5:30 PM	0	0	0	0	0	0	0	1	1	0	0	0	**2**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	**1**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

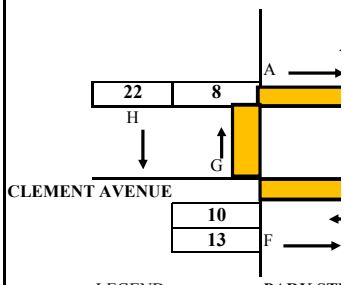
6:00 PM					
DACH	NBT	SBT	EBT	WBT	TOTAL
	0	0	0	1	**1**

B.A.Y

PEDESTRIA

PROJECT:	1825 PARK STREE
N-S APPROACH:	PARK STREET
E-W APPROACH:	CLEMENT AVENU
SURVEY PERIOD:	4:00 PM

PEAK HOUR
05:00 PM TO 06:00 PM PARK ST



LEGEND: PARK ST
CROSSWALK
SIDEWALK
STOP CONTROL LINE
STOP
* J-WALK IN RED

TIME PERIOD			NORTH
From		To	A
04:00 PM	---	04:15 PM	0
04:15 PM	---	04:30 PM	2
04:30 PM	---	04:45 PM	3
04:45 PM	---	05:00 PM	3
05:00 PM	---	05:15 PM	4
05:15 PM	---	05:30 PM	4
05:30 PM	---	05:45 PM	5
05:45 PM	---	06:00 PM	7
04:00 PM	---	04:15 PM	0
04:15 PM	---	04:30 PM	2
04:30 PM	---	04:45 PM	1
04:45 PM	---	05:00 PM	0
05:00 PM	---	05:15 PM	1
05:15 PM	---	05:30 PM	0
05:30 PM	---	05:45 PM	1
05:45 PM	---	06:00 PM	2
04:00 PM	---	05:00 PM	3
04:15 PM	---	05:15 PM	4
04:30 PM	---	05:30 PM	2
04:45 PM	---	05:45 PM	2
05:00 PM	---	06:00 PM	4

Tel : (510) 232-

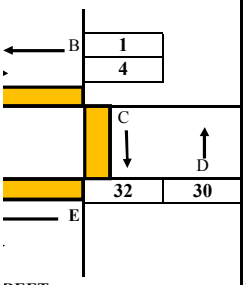
5:00 PM	to	6:00 PM
VOLUME BY DIRECTION		NB
PEDESTRIAN		38
VOLUME BY LEG		N-LEG
PEDESTRIAN		5

.M.E.T.R.I.C.S.

AN MOVEMENT SUMMARY

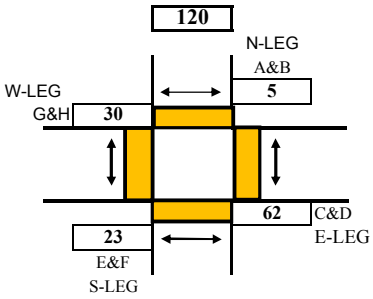
T HOTEL TRAFFIC STUDY		SURVEY DATE:	8/23/2017
		DAY:	WEDNESDAY
JE		JURISDICTION:	ALAMEDA
TO	6:00 PM	FILE:	3708049-1PM

REET



REET

PEAK HOUR
TOTAL PEDESTRIAN VOLUMES



BY LEG:		BY DIRECTION:	
N-LEG	5	NB(D+G)	38
S-LEG	23	SB(C+H)	54
E-LEG	62	EB(A+F)	17
W-LEG	30	WB(B+E)	11

X-WALK	EAST X-WALK		SOUTH X-WALK		WEST X-WALK		
B	*C*	*D*	*E*	*F*	*G*	*H*	*TOTAL*
SURVEY DATA							
3	1	1	0	0	0	5	***10***
5	15	5	1	3	3	9	***43***
8	26	8	1	4	6	12	***68***
8	27	9	1	5	10	17	***80***
8	37	18	3	8	12	19	***109***
8	45	29	7	14	15	24	***146***
8	50	34	8	14	15	26	***160***
9	59	39	11	18	18	39	***200***
TOTAL BY PERIOD							
3	1	1	0	0	0	5	***10***
2	14	4	1	3	3	4	***33***
3	11	3	0	1	3	3	***25***
0	1	1	0	1	4	5	***12***
0	10	9	2	3	2	2	***29***
0	8	11	4	6	3	5	***37***
0	5	5	1	0	0	2	***14***
1	9	5	3	4	3	13	***40***
HOURLY TOTALS							
8	27	9	1	5	10	17	***80***
5	36	17	3	8	12	14	***99***
3	30	24	6	11	12	15	***103***
0	24	26	7	10	9	14	***92***
1	32	30	10	13	8	22	***120***

-1271 *Fax: (510) 232-1272*

SB	EB	WB	TOTAL
54	17	11	**120**
S-LEG	E-LEG	W-LEG	TOTAL
23	62	30	**120**

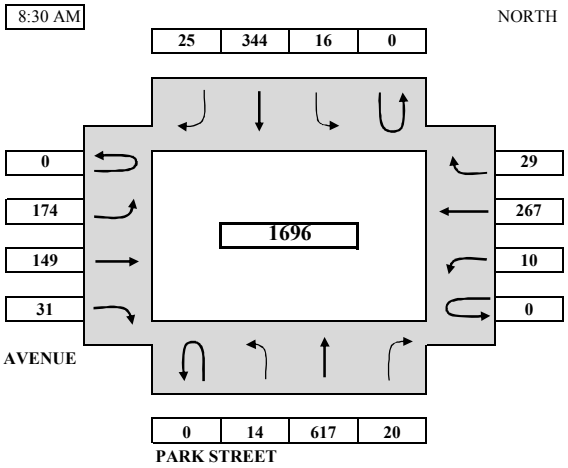
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TURNING MOVEMENT SUMMARY

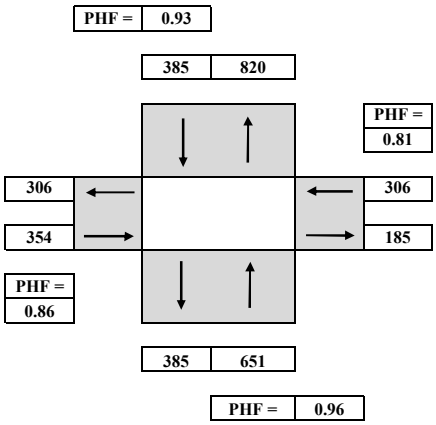
PROJECT:	**1825 PARK STREET HOTEL TRAFFIC STUDY**	**SURVEY DATE:**	**8/23/2017**	**DAY:**	**WEDNESDAY**
N-S APPROACH:	**PARK STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**BUENA VISTA AVENUE**	**JURISDICTION:**	**ALAMEDA**	**FILE:**	**3708049-2AM**

PEAK HOUR
7:30 AM to 8:30 AM

NORTH



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND U-TURN	LEFT	THRU	RIGHT	SOUTHBOUND U-TURN	LEFT	THRU	RIGHT	EASTBOUND U-TURN	LEFT	THRU	RIGHT	WESTBOUND U-TURN	LEFT	THRU	RIGHT	TOTAL
SURVEY DATA																		
7:00 AM	7:15 AM		5	99	2		2	64	4		29	19	3		3	26	7	**263**
7:15 AM	7:30 AM		8	211	9		4	140	13		66	38	7		5	66	14	**581**
7:30 AM	7:45 AM		11	370	13		6	235	20		105	62	12		5	126	18	**983**
7:45 AM	8:00 AM		12	533	18		13	321	25		150	105	17		8	191	27	**1420**
8:00 AM	8:15 AM		17	677	22		18	408	31		191	144	27		10	279	31	**1855**
8:15 AM	8:30 AM		22	828	29		20	484	38		240	187	38		15	333	43	**2277**
8:30 AM	8:45 AM		27	972	33		22	569	48		275	220	44		18	400	48	**2676**
8:45 AM	9:00 AM		33	1084	37		26	671	54		316	247	53		21	466	56	**3064**
TOTAL BY PERIOD																		
7:00 AM	7:15 AM	0	5	99	2	0	2	64	4	0	29	19	3	0	3	26	7	**263**
7:15 AM	7:30 AM	0	3	112	7	0	2	76	9	0	37	19	4	0	2	40	7	**318**
7:30 AM	7:45 AM	0	3	159	4	0	2	95	7	0	39	24	5	0	0	60	4	**402**
7:45 AM	8:00 AM	0	1	163	5	0	7	86	5	0	45	43	5	0	3	65	9	**437**
8:00 AM	8:15 AM	0	5	144	4	0	5	87	6	0	41	39	10	0	2	88	4	**435**
8:15 AM	8:30 AM	0	5	151	7	0	2	76	7	0	49	43	11	0	5	54	12	**422**
8:30 AM	8:45 AM	0	5	144	4	0	2	85	10	0	35	33	6	0	3	67	5	**399**
8:45 AM	9:00 AM	0	6	112	4	0	4	102	6	0	41	27	9	0	3	66	8	**388**
HOURLY TOTALS																		
7:00 AM	8:00 AM	0	12	533	18	0	13	321	25	0	150	105	17	0	8	191	27	**1420**
7:15 AM	8:15 AM	0	12	578	20	0	16	344	27	0	162	125	24	0	7	253	24	**1592**
7:30 AM	8:30 AM	0	14	617	20	0	16	344	25	0	174	149	31	0	10	267	29	**1696**
7:45 AM	8:45 AM	0	16	602	20	0	16	334	28	0	170	158	32	0	13	274	30	**1693**
8:00 AM	9:00 AM	0	21	551	19	0	13	350	29	0	166	142	36	0	13	275	29	**1644**

PEAK HOUR SUMMARY

7:30 AM to 8:30 AM	NORTHBOUND NBU	NBL	NBT	NBR	SOUTHBOUND SBU	SBL	SBT	SBR	EASTBOUND EBU	EBL	EBT	EBR	WESTBOUND WBU	WBL	WBT	WBR	TOTAL
VOLUME	0	14	617	20	0	16	344	25	0	174	149	31	0	10	267	29	**1696**
PHF BY MOVEMENT	0.00	0.70	0.95	0.71	0.00	0.57	0.91	0.89	0.00	0.89	0.87	0.70	0.00	0.50	0.76	0.60	OVERALL
PHF BY APPROACH	0.96				0.93				0.86				0.81				0.97

TRUCK	IN	OUT	IN	OUT	IN	OUT	IN	OUT	OVERALL
TRUCK VOLUMES	13	14	11	12	4	3	4	3	**32**
TRUCK PERCENTAGE	2.0%	1.7%	2.9%	3.1%	1.1%	1.6%	1.3%	1.0%	**1.9%**
TRANSIT VOLUMES	7	3	3	2	15	0	0	0	**15**
TRANSIT PERCENTAGE	1.1%	0.8%	0.8%	0.7%	0.9%	0.0%	0.0%	0.0%	**0.9%**
BICYCLE	0		3		0		4		**7**
PEDESTRIAN BY DIR	19		33		24		12		**88**
	N-LEG		**S-LEG**		**E-LEG**		**W-LEG**		
PEDESTRIAN BY LEG	12		24		23		29		**88**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

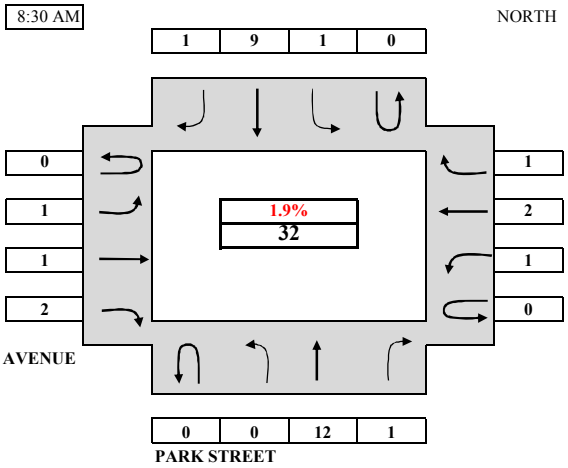
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TRUCK TURNING MOVEMENT SUMMARY

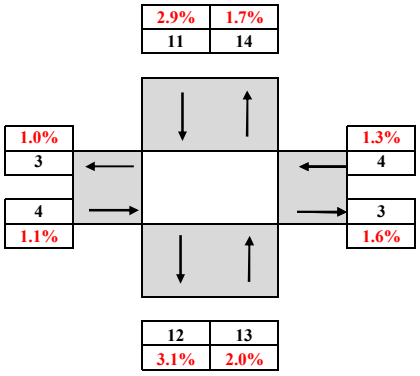
PROJECT:	**1825 PARK STREET HOTEL TRAFFIC STUDY**	**SURVEY DATE:**	**8/23/2017**	**DAY:**	**WEDNESDAY**
N-S APPROACH:	**PARK STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**BUENA VISTA AVENUE**	**JURISDICTION:**	**ALAMEDA**	**FILE:**	**3708049-2AM**

PEAK HOUR
7:30 AM to 8:30 AM

NORTH



TRUCK ARRIVAL / DEPARTURE VOLUMES & PERCENTAGE (TOTAL TRUCK PERCENTAGE IN RED)



TIME From	PERIOD To	NORTHBOUND U-TURN	NORTHBOUND LEFT	NORTHBOUND THRU	NORTHBOUND RIGHT	SOUTHBOUND U-TURN	SOUTHBOUND LEFT	SOUTHBOUND THRU	SOUTHBOUND RIGHT	EASTBOUND U-TURN	EASTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	WESTBOUND U-TURN	WESTBOUND LEFT	WESTBOUND THRU	WESTBOUND RIGHT	TOTAL
SURVEY DATA																		
7:00 AM	7:15 AM	0	2	0	0	0	1	5	0	0	0	0	0	0	1	1	0	**10**
7:15 AM	7:30 AM	0	2	2	0	0	2	6	1	0	0	0	0	0	1	2	1	**17**
7:30 AM	7:45 AM	0	2	2	0	0	2	7	1	0	0	0	0	0	1	2	1	**18**
7:45 AM	8:00 AM	0	2	6	0	0	3	8	2	0	1	1	0	0	1	3	1	**28**
8:00 AM	8:15 AM	0	2	10	0	0	3	10	2	0	1	1	2	0	1	4	1	**37**
8:15 AM	8:30 AM	0	2	14	1	0	3	15	2	0	1	1	2	0	2	4	2	**49**
8:30 AM	8:45 AM	0	2	19	1	0	3	17	2	0	1	1	2	0	2	4	2	**56**
8:45 AM	9:00 AM	0	2	24	1	0	4	19	2	0	2	2	2	0	2	5	2	**67**
TOTAL BY PERIOD																		
7:00 AM	7:15 AM	0	2	0	0	0	1	5	0	0	0	0	0	0	1	1	0	**10**
7:15 AM	7:30 AM	0	0	2	0	0	1	1	1	0	0	0	0	0	0	1	1	**7**
7:30 AM	7:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
7:45 AM	8:00 AM	0	0	4	0	0	1	1	1	0	1	1	0	0	0	1	0	**10**
8:00 AM	8:15 AM	0	0	4	0	0	0	2	0	0	0	0	2	0	0	1	0	**9**
8:15 AM	8:30 AM	0	0	4	1	0	0	5	0	0	0	0	0	0	1	0	1	**12**
8:30 AM	8:45 AM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	**7**
8:45 AM	9:00 AM	0	0	5	0	0	1	2	0	0	1	1	0	0	0	1	0	**11**
HOURLY TOTALS																		
7:00 AM	8:00 AM	0	2	6	0	0	3	8	2	0	1	1	0	0	1	3	1	**28**
7:15 AM	8:15 AM	0	0	10	0	0	2	5	2	0	1	1	2	0	0	3	1	**27**
7:30 AM	8:30 AM	0	0	12	1	0	1	9	1	0	1	1	2	0	1	2	1	**32**
7:45 AM	8:45 AM	0	0	17	1	0	1	10	1	0	1	1	2	0	1	2	1	**38**
8:00 AM	9:00 AM	0	0	18	1	0	1	11	0	0	1	1	2	0	1	2	1	**39**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

7:30 AM to 8:30 AM

DIRECTION	NB IN	NB OUT	SB IN	SB OUT	EB IN	EB OUT	WB IN	WB OUT	OVERALL INTERSECTION
TRUCK VOLUMES	13	14	11	12	4	3	4	3	32
TRUCK PERCENTAGE	2.0%	1.7%	2.9%	3.1%	1.1%	1.6%	1.3%	1.0%	1.9%

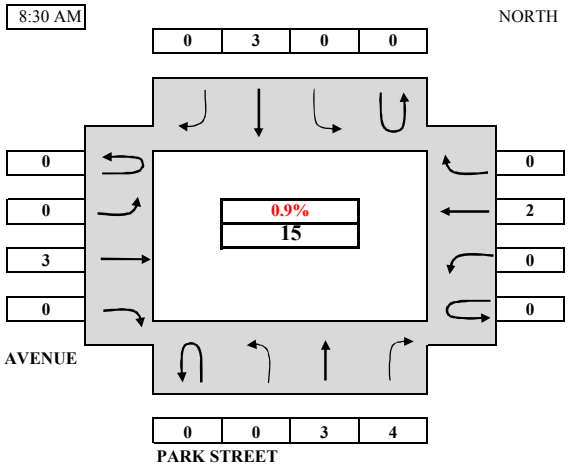
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TRANSIT TURNING MOVEMENT SUMMARY

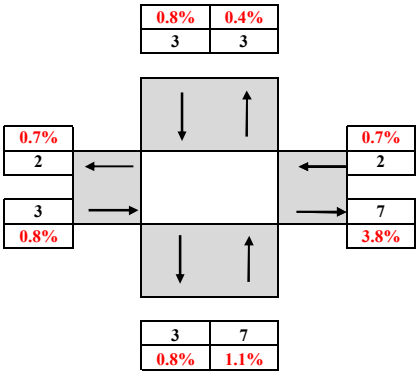
T:	1825 PARK STREET HOTEL TRAFFIC STUDY	SURVEY DATE:	8/23/2017	DAY:	WEDNESDAY
ROACH:	PARK STREET	SURVEY TIME:	7:00 AM	TO	9:00 AM
PROACH:	BUENA VISTA AVENUE	JURISDICTION:	ALAMEDA	FILE:	3708049-2AM

AK HOUR
to 8:30 AM

NORTH



TRANSIT ARRIVAL / DEPARTURE
VOLUMES & PERCENTAGE
(TOTAL TRANSIT PERCENTAGE IN RED)



PERIOD	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
To	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	U-TURN	LEFT	THRU	RIGHT	
SURVEY DATA																	
to 7:15 AM	0	0	1	1	0	0	1	0	0	0	1	0	0	0	1	0	**5**
to 7:30 AM	0	0	2	2	0	0	2	0	0	0	2	0	0	0	2	0	**10**
to 7:45 AM	0	0	3	3	0	0	3	0	0	0	3	0	0	0	2	0	**14**
to 8:00 AM	0	0	3	3	0	0	4	0	0	0	3	0	0	0	3	0	**16**
to 8:15 AM	0	0	5	5	0	0	5	0	0	0	4	0	0	0	4	0	**23**
to 8:30 AM	0	0	5	6	0	0	5	0	0	0	5	0	0	0	4	0	**25**
to 8:45 AM	0	0	7	8	0	0	7	0	0	0	6	0	0	0	5	0	**33**
to 9:00 AM	0	0	7	9	0	0	7	0	0	0	6	0	0	0	6	0	**35**
TOTAL BY PERIOD																	
to 7:15 AM	0	0	1	1	0	0	1	0	0	0	1	0	0	0	1	0	**5**
to 7:30 AM	0	0	1	1	0	0	1	0	0	0	1	0	0	0	1	0	**5**
to 7:45 AM	0	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	**4**
to 8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	**2**
to 8:15 AM	0	0	2	2	0	0	1	0	0	0	1	0	0	0	1	0	**7**
to 8:30 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	**2**
to 8:45 AM	0	0	2	2	0	0	2	0	0	0	1	0	0	0	1	0	**8**
to 9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	**2**
HOURLY TOTALS																	
to 8:00 AM	0	0	3	3	0	0	4	0	0	0	3	0	0	0	3	0	**16**
to 8:15 AM	0	0	4	4	0	0	4	0	0	0	3	0	0	0	3	0	**18**
to 8:30 AM	0	0	3	4	0	0	3	0	0	0	3	0	0	0	2	0	**15**
to 8:45 AM	0	0	4	5	0	0	4	0	0	0	3	0	0	0	3	0	**19**
to 9:00 AM	0	0	4	6	0	0	3	0	0	0	3	0	0	0	3	0	**19**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

to 8:30 AM

RECTION	NB		SB		EB		WB		OVERALL
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	INTERSECTION
K VOLUMES	7	3	3	3	3	7	2	2	15
PERCENTAGE	1.1%	0.4%	0.8%	0.8%	0.8%	3.8%	0.7%	0.7%	0.9%

PROJECT:
N-S APPROACH:
E-W APPROACH:

PEAK HOU
7:30 AM TO

WEST - LEG
0
0
0

BUENA VISTA AVE

TIME	PER
From	
7:00 AM	to
7:15 AM	to
7:30 AM	to
7:45 AM	to
8:00 AM	to
8:15 AM	to
8:30 AM	to
8:45 AM	to
7:00 AM	to
7:15 AM	to
7:30 AM	to
7:45 AM	to
8:00 AM	to
8:15 AM	to
8:30 AM	to
8:45 AM	to
7:00 AM	to
7:15 AM	to
7:30 AM	to
7:45 AM	to
8:00 AM	to

7:30 AM to
VOLUME BY APPR
BICYCLE

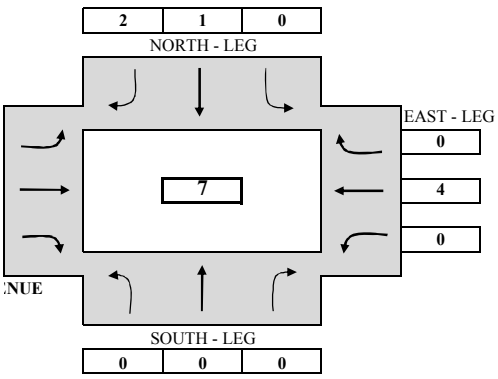
B.A.Y.M.E.T.R.I.C.S.

BICYCLE MOVEMENT SUMMARY

1825 PARK STREET HOTEL TRAFFIC STUDY	SURVEY DATE:	8/23/2017	DAY:	WEDNESDAY
PARK STREET	SURVEY TIME:	7:00 AM	TO	9:00 AM
BUENA VISTA AVENUE	JURISDICTION:	ALAMEDA	FILE:	3708049-2AM

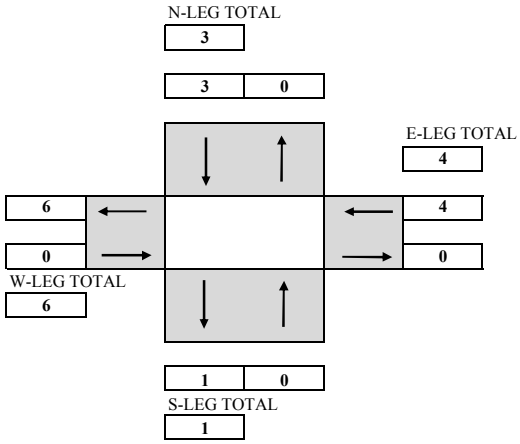
R
8:30 AM

NORTH



PARK STREET

ARRIVAL / DEPARTURE VOLUMES



RIOD	NB (SOUTH - LEG)			SB (NORTH - LEG)			EB (WEST - LEG)			WB (EAST - LEG)			TOTAL
To	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
SURVEY DATA													
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	**1**
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	**1**
7:45 AM	0	0	0	0	1	2	0	0	0	0	0	0	**3**
8:00 AM	0	0	0	0	2	2	0	0	0	0	2	0	**6**
8:15 AM	0	0	0	0	2	2	0	0	0	0	3	0	**7**
8:30 AM	0	0	0	0	2	2	0	0	0	0	4	0	**8**
8:45 AM	0	0	0	0	2	2	0	1	0	0	5	0	**10**
9:00 AM	0	1	0	0	2	2	0	1	0	0	5	0	**11**
TOTAL BY PERIOD													
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	**1**
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	**2**
8:00 AM	0	0	0	0	1	0	0	0	0	0	2	0	**3**
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	**1**
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	**1**
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	**2**
9:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	**1**
HOURLY TOTALS													
8:00 AM	0	0	0	0	2	2	0	0	0	0	2	0	**6**
8:15 AM	0	0	0	0	1	2	0	0	0	0	3	0	**6**
8:30 AM	0	0	0	0	1	2	0	0	0	0	4	0	**7**
8:45 AM	0	0	0	0	1	0	0	1	0	0	5	0	**7**
9:00 AM	0	1	0	0	0	0	0	1	0	0	3	0	**5**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

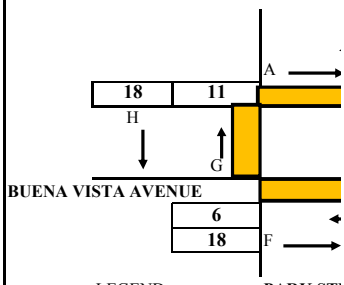
8:30 AM					
DACH	NBT	SBT	EBT	WBT	TOTAL
	0	3	0	4	**7**

B.A.Y

PEDESTRIA

PROJECT:	1825 PARK STREE
N-S APPROACH:	PARK STREET
E-W APPROACH:	BUENA VISTA AV
SURVEY PERIOD:	7:00 AM

PEAK HOUR
07:30 AM TO 08:30 AM DRIVEWA



LEGEND:
- CROSSWALK
- SIDEWALK
- STOP CONTROL LINE
- STOP
- * J-WALK IN RED

TIME PERIOD			NORTH
From		To	A
07:00 AM	---	07:15 AM	1
07:15 AM	---	07:30 AM	3
07:30 AM	---	07:45 AM	4
07:45 AM	---	08:00 AM	8
08:00 AM	---	08:15 AM	9
08:15 AM	---	08:30 AM	9
08:30 AM	---	08:45 AM	10
08:45 AM	---	09:00 AM	11
07:00 AM	---	07:15 AM	1
07:15 AM	---	07:30 AM	2
07:30 AM	---	07:45 AM	1
07:45 AM	---	08:00 AM	4
08:00 AM	---	08:15 AM	1
08:15 AM	---	08:30 AM	0
08:30 AM	---	08:45 AM	1
08:45 AM	---	09:00 AM	1
07:00 AM	---	08:00 AM	8
07:15 AM	---	08:15 AM	8
07:30 AM	---	08:30 AM	6
07:45 AM	---	08:45 AM	6
08:00 AM	---	09:00 AM	3

Tel : (510) 232-

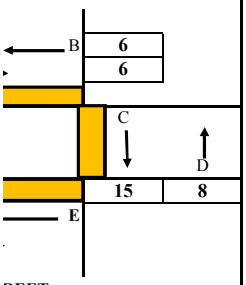
7:30 AM	to	8:30 AM
VOLUME BY DIRECTION		NB
PEDESTRIAN		19
VOLUME BY LEG		N-LEG
PEDESTRIAN		12

.M.E.T.R.I.C.S.

AN MOVEMENT SUMMARY

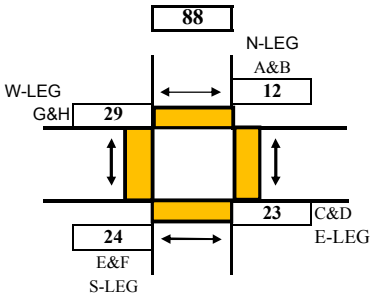
T HOTEL TRAFFIC STUDY		SURVEY DATE:	8/23/2017
-	DRIVEWAY (N)	DAY:	WEDNESDAY
ENUE		JURISDICTION:	ALAMEDA
TO	9:00 AM	FILE:	3708049-2AM

AY (N)



REET

PEAK HOUR
TOTAL PEDESTRIAN VOLUMES



BY LEG:		BY DIRECTION:	
N-LEG	12	NB(D+G)	19
S-LEG	24	SB(C+H)	33
E-LEG	23	EB(A+F)	24
W-LEG	29	WB(B+E)	12

X-WALK	EAST X-WALK		SOUTH X-WALK		WEST X-WALK		
B	*C*	*D*	*E*	*F*	*G*	*H*	*TOTAL*
SURVEY DATA							
1	4	0	0	3	1	2	***12***
1	6	0	0	3	2	3	***18***
2	10	2	3	7	7	8	***43***
4	16	3	5	8	11	14	***69***
6	18	6	6	15	13	16	***89***
7	21	8	6	21	13	21	***106***
8	28	12	9	27	15	24	***133***
9	29	20	10	29	18	27	***153***
TOTAL BY PERIOD							
1	4	0	0	3	1	2	***12***
0	2	0	0	0	1	1	***6***
1	4	2	3	4	5	5	***25***
2	6	1	2	1	4	6	***26***
2	2	3	1	7	2	2	***20***
1	3	2	0	6	0	5	***17***
1	7	4	3	6	2	3	***27***
1	1	8	1	2	3	3	***20***
HOURLY TOTALS							
4	16	3	5	8	11	14	***69***
5	14	6	6	12	12	14	***77***
6	15	8	6	18	11	18	***88***
6	18	10	6	20	8	16	***90***
5	13	17	5	21	7	13	***84***

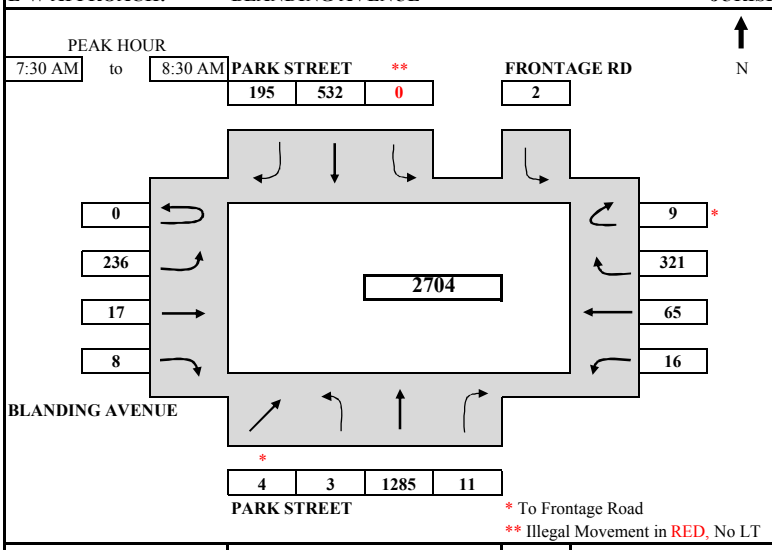
-1271 *Fax: (510) 232-1272*

SB	EB	WB	TOTAL
33	24	12	**88**
S-LEG	E-LEG	W-LEG	TOTAL
24	23	29	**88**

B.A.Y.M.E.T.R.I.C.S.

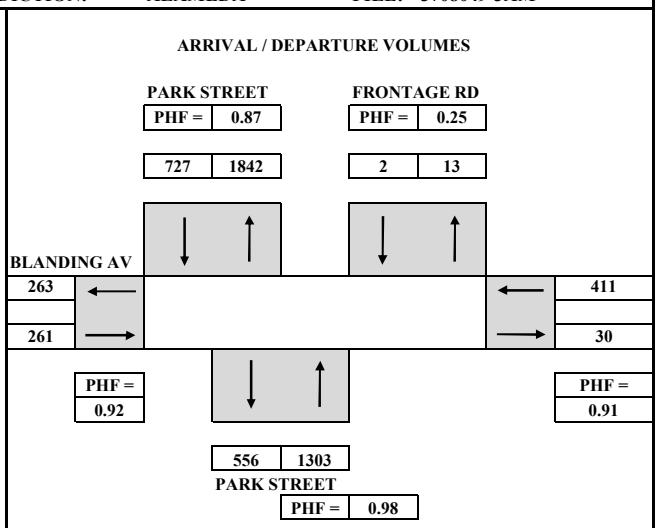
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	**1825 PARK STREET HOTEL TRAFFIC STUDY**	**SURVEY DATE:**	**8/23/2017**	**DAY:**	**WEDNESDAY**
N-S APPROACH:	**PARK STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**BLANDING AVENUE**	**JURISDICTION:**	**ALAMEDA**	**FILE:**	**3708049-3AM**



* To Frontage Road

** Illegal Movement in RED, No LT



TIME From	TIME To	NORTHBOUND FTAGE	NORTHBOUND LEFT	NORTHBOUND THRU	NORTHBOUND RIGHT	SOUTHBOUND FTAGE	SOUTHBOUND LEFT	SOUTHBOUND THRU	SOUTHBOUND RIGHT	EASTBOUND U-TURN	EASTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	WESTBOUND FTAGE	WESTBOUND LEFT	WESTBOUND THRU	WESTBOUND RIGHT	TOTAL
SURVEY DATA																		
7:00 AM	7:15 AM	0	0	210	2	0		101	35		37	3	1	1	1	17	44	**452**
7:15 AM	7:30 AM	0	0	464	5	0		229	66		73	6	2	2	5	34	94	**980**
7:30 AM	7:45 AM	1	1	784	10	0		365	121		129	10	3	4	8	54	169	**1659**
7:45 AM	8:00 AM	3	1	1114	11	2		517	178		192	12	3	5	11	67	265	**2381**
8:00 AM	8:15 AM	3	2	1441	15	2		651	222		250	16	5	7	16	84	341	**3055**
8:15 AM	8:30 AM	4	3	1749	16	2		761	261		309	23	10	11	21	99	415	**3684**
8:30 AM	8:45 AM	5	3	2050	18	2		903	299		355	26	15	12	29	113	491	**4321**
8:45 AM	9:00 AM	6	3	2318	20	2		1053	338		406	27	20	14	33	131	568	**4939**
TOTAL BY PERIOD																		
7:00 AM	7:15 AM	0	0	210	2	0	0	101	35	0	37	3	1	1	1	17	44	**452**
7:15 AM	7:30 AM	0	0	254	3	0	0	128	31	0	36	3	1	1	4	17	50	**528**
7:30 AM	7:45 AM	1	1	320	5	0	0	136	55	0	56	4	1	2	3	20	75	**679**
7:45 AM	8:00 AM	2	0	330	1	2	0	152	57	0	63	2	0	1	3	13	96	**722**
8:00 AM	8:15 AM	0	1	327	4	0	0	134	44	0	58	4	2	2	5	17	76	**674**
8:15 AM	8:30 AM	1	1	308	1	0	0	110	39	0	59	7	5	4	5	15	74	**629**
8:30 AM	8:45 AM	1	0	301	2	0	0	142	38	0	46	3	5	1	8	14	76	**637**
8:45 AM	9:00 AM	1	0	268	2	0	0	150	39	0	51	1	5	2	4	18	77	**618**
HOURLY TOTALS																		
7:00 AM	8:00 AM	3	1	1114	11	2	0	517	178	0	192	12	3	5	11	67	265	**2381**
7:15 AM	8:15 AM	3	2	1231	13	2	0	550	187	0	213	13	4	6	15	67	297	**2603**
7:30 AM	8:30 AM	4	3	1285	11	2	0	532	195	0	236	17	8	9	16	65	321	**2704**
7:45 AM	8:45 AM	4	2	1266	8	2	0	538	178	0	226	16	12	8	21	59	322	**2662**
8:00 AM	9:00 AM	3	2	1204	9	0	0	536	160	0	214	15	17	9	22	64	303	**2558**

PEAK HOUR SUMMARY

7:30 AM to 8:30 AM	NORTHBOUND FTAGE	NORTHBOUND LEFT	NORTHBOUND THRU	NORTHBOUND RIGHT	SOUTHBOUND FTAGE	SOUTHBOUND LEFT	SOUTHBOUND THRU	SOUTHBOUND RIGHT	EASTBOUND U-TURN	EASTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	WESTBOUND FTAGE	WESTBOUND LEFT	WESTBOUND THRU	WESTBOUND RIGHT	TOTAL
VOLUME	4	3	1285	11	2	0	532	195	0	236	17	8	9	16	65	321	**2704**
PHF BY MOVEMENT	0.50	0.75	0.97	0.55	0.25	0.00	0.88	0.86	0.00	0.94	0.61	0.40	0.56	0.80	0.81	0.84	OVERALL
PHF BY APPROACH	0.98				0.25	0.87			0.92				0.91				0.94

TRUCK	NORTHBOUND IN	NORTHBOUND OUT	SOUTHBOUND IN	SOUTHBOUND OUT	EASTBOUND IN	EASTBOUND OUT	WESTBOUND IN	WESTBOUND OUT	OVERALL
TRUCK VOLUMES	21	32	14	18	3	1	16	1	**54**
TRUCK PERCENTAGE	1.6%	1.7%	1.9%	3.2%	1.1%	3.3%	3.9%	0.4%	**2.0%**
TRANSIT VOLUMES	3	0	0	4	7	0	0	0	**7**
TRANSIT PERCENTAGE	0.2%	0.0%	0.0%	1.0%	0.3%	0.0%	0.0%	0.0%	**0.3%**
BICYCLE	8		1		0		7		**16**
PEDESTRIAN BY DIR	11		17		4		10		**42**
	N-LEG		**S-LEG**		**E-LEG**		**W-LEG**		
PEDESTRIAN BY LEG	1		13		13		15		**42**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

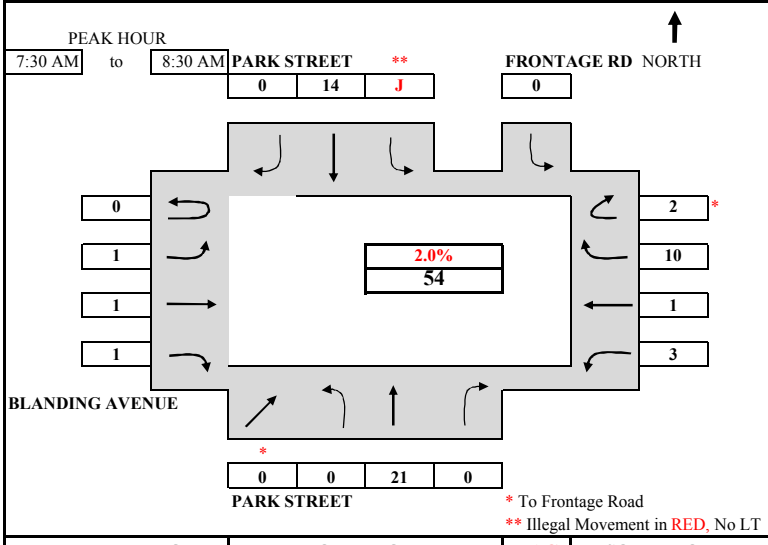
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TRUCK TURNING MOVEMENT SUMMARY

PROJECT:	**1825 PARK STREET HOTEL TRAFFIC STUDY**	**SURVEY DATE:**	**8/23/2017**	**DAY:**	**WEDNESDAY**
N-S APPROACH:	**PARK STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**BLANDING AVENUE**	**JURISDICTION:**	**ALAMEDA**	**FILE:**	**3708049-3AM**

PEAK HOUR

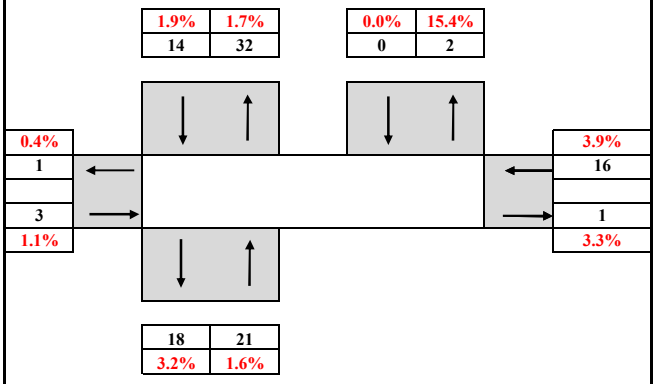
7:30 AM to 8:30 AM



* To Frontage Road

** Illegal Movement in RED, No LT

TRUCK ARRIVAL / DEPARTURE VOLUMES & PERCENTAGE (TOTAL TRUCK PERCENTAGE IN RED)



TIME From	PERIOD To	NORTHBOUND FTAGE	NORTHBOUND LEFT	NORTHBOUND THRU	NORTHBOUND RIGHT	SOUTHBOUND FTAGE	SOUTHBOUND LEFT	SOUTHBOUND THRU	SOUTHBOUND RIGHT	EASTBOUND U-TURN	EASTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	WESTBOUND FTAGE	WESTBOUND LEFT	WESTBOUND THRU	WESTBOUND RIGHT	TOTAL
SURVEY DATA																		
7:00 AM	to 7:15 AM	0	0	2	0	0	0	5	0	0	1	0	0	0	0	1	2	**11**
7:15 AM	to 7:30 AM	0	0	9	0	0	0	7	0	0	1	0	1	0	1	2	2	**23**
7:30 AM	to 7:45 AM	0	0	13	0	0	0	10	0	0	2	0	1	2	1	2	5	**36**
7:45 AM	to 8:00 AM	0	0	18	0	0	0	14	0	0	2	0	1	2	2	2	7	**48**
8:00 AM	to 8:15 AM	0	0	26	0	0	0	17	0	0	2	1	2	2	4	2	9	**65**
8:15 AM	to 8:30 AM	0	0	30	0	0	0	21	0	0	2	1	2	2	4	3	12	**77**
8:30 AM	to 8:45 AM	0	0	34	0	0	0	25	1	0	2	2	2	2	5	3	14	**90**
8:45 AM	to 9:00 AM	0	0	39	0	0	0	29	1	0	2	2	2	2	5	3	17	**102**
TOTAL BY PERIOD																		
7:00 AM	to 7:15 AM	0	0	2	0	0	0	5	0	0	1	0	0	0	0	1	2	**11**
7:15 AM	to 7:30 AM	0	0	7	0	0	0	2	0	0	0	0	1	0	1	1	0	**12**
7:30 AM	to 7:45 AM	0	0	4	0	0	0	3	0	0	1	0	0	2	0	0	3	**13**
7:45 AM	to 8:00 AM	0	0	5	0	0	0	4	0	0	0	0	0	0	1	0	2	**12**
8:00 AM	to 8:15 AM	0	0	8	0	0	0	3	0	0	0	1	1	0	2	0	2	**17**
8:15 AM	to 8:30 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	1	3	**12**
8:30 AM	to 8:45 AM	0	0	4	0	0	0	4	1	0	0	1	0	0	1	0	2	**13**
8:45 AM	to 9:00 AM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	3	**12**
HOURLY TOTALS																		
7:00 AM	to 8:00 AM	0	0	18	0	0	0	14	0	0	2	0	1	2	2	2	7	**48**
7:15 AM	to 8:15 AM	0	0	24	0	0	0	12	0	0	1	1	2	2	4	1	7	**54**
7:30 AM	to 8:30 AM	0	0	21	0	0	0	14	0	0	1	1	1	2	3	1	10	**54**
7:45 AM	to 8:45 AM	0	0	21	0	0	0	15	1	0	0	2	1	0	4	1	9	**54**
8:00 AM	to 9:00 AM	0	0	21	0	0	0	15	1	0	0	2	1	0	3	1	10	**54**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

7:30 AM to 8:30 AM

DIRECTION	NB IN	NB OUT	SB IN	SB OUT	EB IN	EB OUT	WB IN	WB OUT	OVERALL INTERSECTION
TRUCK VOLUMES	21	32	14	18	3	1	16	1	54
TRUCK PERCENTAGE	1.6%	1.7%	1.9%	3.2%	1.1%	3.3%	3.9%	0.4%	2.0%

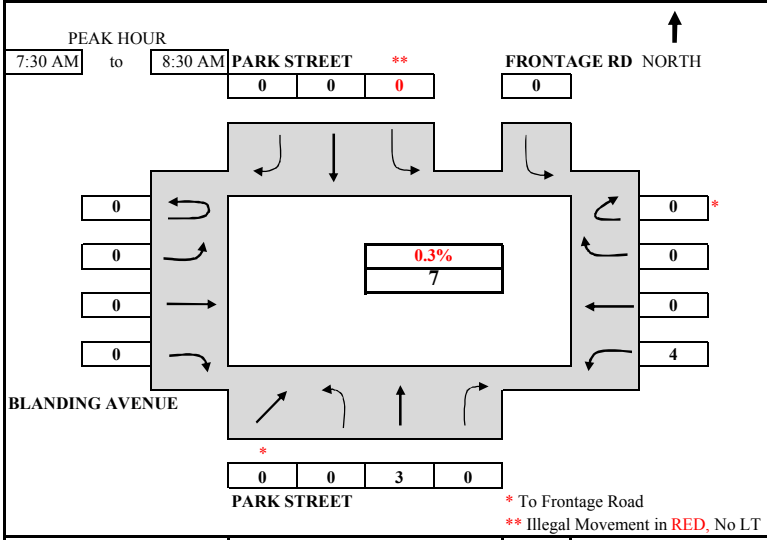
B.A.Y.M.E.T.R.I.C.S.

INTERSECTION TRANSIT TURNING MOVEMENT SUMMARY

PROJECT:	**1825 PARK STREET HOTEL TRAFFIC STUDY**	**SURVEY DATE:**	**8/23/2017**	**DAY:**	**WEDNESDAY**
N-S APPROACH:	**PARK STREET**	**SURVEY TIME:**	**7:00 AM**	**TO**	**9:00 AM**
E-W APPROACH:	**BLANDING AVENUE**	**JURISDICTION:**	**ALAMEDA**	**FILE:**	**3708049-3AM**

PEAK HOUR

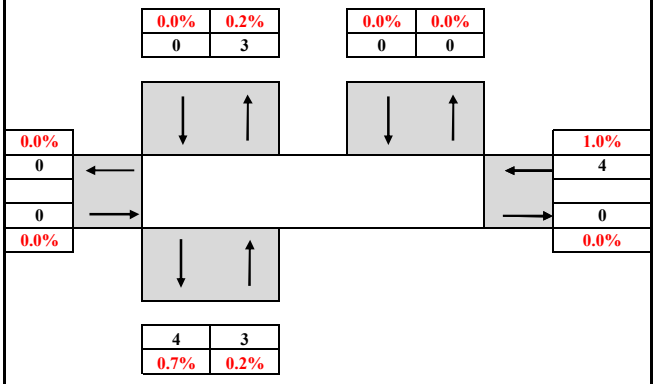
7:30 AM to 8:30 AM



* To Frontage Road

** Illegal Movement in RED, No LT

TRANSIT ARRIVAL / DEPARTURE VOLUMES & PERCENTAGE (TOTAL TRANSIT PERCENTAGE IN RED)



TIME From	TO	PERIOD	NORTHBOUND FTAGE	NORTHBOUND LEFT	NORTHBOUND THRU	NORTHBOUND RIGHT	SOUTHBOUND FTAGE	SOUTHBOUND LEFT	SOUTHBOUND THRU	SOUTHBOUND RIGHT	EASTBOUND U-TURN	EASTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	WESTBOUND FTAGE	WESTBOUND LEFT	WESTBOUND THRU	WESTBOUND RIGHT	TOTAL
SURVEY DATA																			
7:00 AM	to 7:15 AM		0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	**2**
7:15 AM	to 7:30 AM		0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	**4**
7:30 AM	to 7:45 AM		0	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	**6**
7:45 AM	to 8:00 AM		0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	**8**
8:00 AM	to 8:15 AM		0	0	5	0	0	0	0	0	0	0	0	0	0	5	0	0	**10**
8:15 AM	to 8:30 AM		0	0	5	0	0	0	0	0	0	0	0	0	0	6	0	0	**11**
8:30 AM	to 8:45 AM		0	0	7	0	0	0	0	0	0	0	0	0	0	7	0	0	**14**
8:45 AM	to 9:00 AM		0	0	7	0	0	0	0	0	0	0	0	0	0	7	0	0	**14**
TOTAL BY PERIOD																			
7:00 AM	to 7:15 AM		0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	**2**
7:15 AM	to 7:30 AM		0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	**2**
7:30 AM	to 7:45 AM		0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	**2**
7:45 AM	to 8:00 AM		0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	**2**
8:00 AM	to 8:15 AM		0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	**2**
8:15 AM	to 8:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
8:30 AM	to 8:45 AM		0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	**3**
8:45 AM	to 9:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
HOURLY TOTALS																			
7:00 AM	to 8:00 AM		0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	**8**
7:15 AM	to 8:15 AM		0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	**8**
7:30 AM	to 8:30 AM		0	0	3	0	0	0	0	0	0	0	0	0	0	4	0	0	**7**
7:45 AM	to 8:45 AM		0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	**8**
8:00 AM	to 9:00 AM		0	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	**6**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

7:30 AM to 8:30 AM

DIRECTION	NB IN	NB OUT	SB IN	SB OUT	EB IN	EB OUT	WB IN	WB OUT	OVERALL INTERSECTION
TRUCK VOLUMES	3	3	0	4	0	0	4	0	7
TRUCK PERCENTAGE	0.2%	0.2%	0.0%	0.7%	0.0%	0.0%	1.0%	0.0%	0.3%

B.A.Y.M.E.T.R.I.C.S.

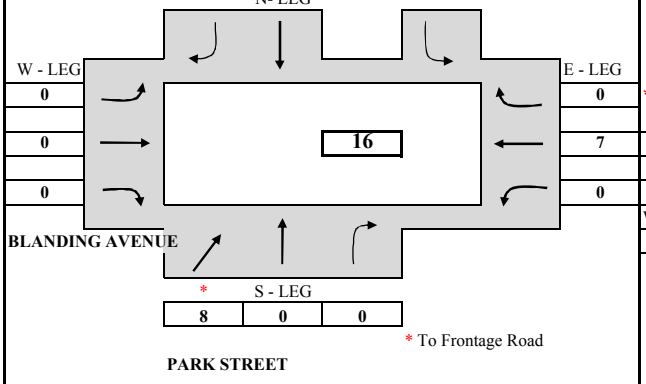
BICYCLE MOVEMENT SUMMARY

PROJECT:	1825 PARK STREET HOTEL TRAFFIC STUDY	SURVEY DATE:	8/23/2017	DAY:	WEDNESDAY
N-S APPROACH:	PARK STREET	SURVEY TIME:	7:00 AM	TO	9:00 AM
E-W APPROACH:	BLANDING AVENUE	JURISDICTION:	ALAMEDA	FILE:	3708049-3AM

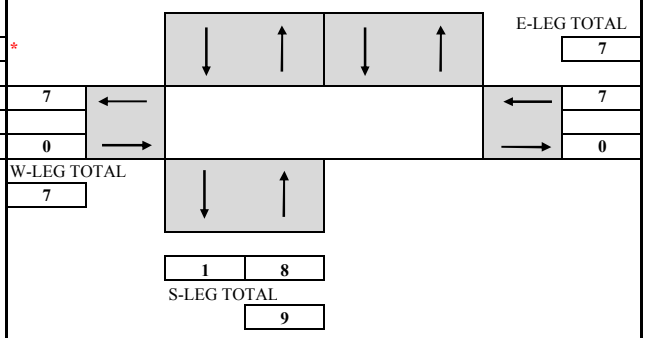
PEAK HOUR

7:30 AM TO 8:30 AM

NORTH



ARRIVAL / DEPARTURE VOLUMES



TIME From		PERIOD To	NB (SOUTH - LEG) FTAGE	THRU	RIGHT	FTAGE LEFT	SB (N - LEG) THRU	RIGHT	EB (WEST - LEG) LEFT	THRU	RIGHT	WB (EAST - LEG) FTAGE	THRU	RIGHT	TOTAL
SURVEY DATA															
7:00 AM	to	7:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	**2**
7:15 AM	to	7:30 AM	3	0	0	0	0	0	0	0	0	0	3	0	**6**
7:30 AM	to	7:45 AM	7	0	0	0	0	0	0	0	0	0	3	0	**10**
7:45 AM	to	8:00 AM	7	0	0	0	1	0	0	0	0	0	4	0	**12**
8:00 AM	to	8:15 AM	8	0	0	0	1	0	0	0	0	0	8	0	**17**
8:15 AM	to	8:30 AM	11	0	0	0	1	0	0	0	0	0	10	0	**22**
8:30 AM	to	8:45 AM	14	0	0	0	1	0	0	1	0	0	11	0	**27**
8:45 AM	to	9:00 AM	14	0	0	0	1	0	0	1	0	0	13	0	**29**
TOTAL BY PERIOD															
7:00 AM	to	7:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	**2**
7:15 AM	to	7:30 AM	1	0	0	0	0	0	0	0	0	0	3	0	**4**
7:30 AM	to	7:45 AM	4	0	0	0	0	0	0	0	0	0	0	0	**4**
7:45 AM	to	8:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	**2**
8:00 AM	to	8:15 AM	1	0	0	0	0	0	0	0	0	0	4	0	**5**
8:15 AM	to	8:30 AM	3	0	0	0	0	0	0	0	0	0	2	0	**5**
8:30 AM	to	8:45 AM	3	0	0	0	0	0	0	1	0	0	1	0	**5**
8:45 AM	to	9:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	**2**
HOURLY TOTALS															
7:00 AM	to	8:00 AM	7	0	0	0	1	0	0	0	0	0	4	0	**12**
7:15 AM	to	8:15 AM	6	0	0	0	1	0	0	0	0	0	8	0	**15**
7:30 AM	to	8:30 AM	8	0	0	0	1	0	0	0	0	0	7	0	**16**
7:45 AM	to	8:45 AM	7	0	0	0	1	0	0	1	0	0	8	0	**17**
8:00 AM	to	9:00 AM	7	0	0	0	0	0	0	1	0	0	9	0	**17**

TEL: (510) 232 - 1271 FAX: (510) 232 - 1272

7:30 AM to 8:30 AM					
VOLUME BY APPROACH	NBT	SBT	EBT	WBT	TOTAL
BICYCLE	8	1	0	7	**16**

PE

PROJECT:
N-S APPROACH:
E-W APPROACH:
SURVEY PERIOD:

PEAK HOU
07:30 AM TO

8
H
BLANDING AVENUE

LEGEND:
*

TIME From	PERI
07:00 AM	---
07:15 AM	---
07:30 AM	---
07:45 AM	---
08:00 AM	---
08:15 AM	---
08:30 AM	---
08:45 AM	---
07:00 AM	---
07:15 AM	---
07:30 AM	---
07:45 AM	---
08:00 AM	---
08:15 AM	---
08:30 AM	---
08:45 AM	---
07:00 AM	---
07:15 AM	---
07:30 AM	---
07:45 AM	---
08:00 AM	---

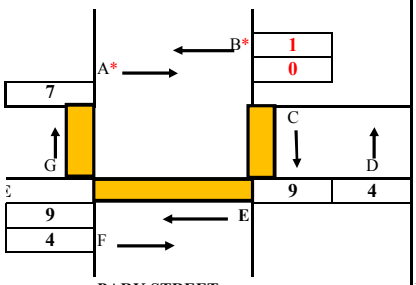
7:30 AM to
VOLUME BY DIRECT
PEDESTRIAN
VOLUME BY LEG
PEDESTRIAN

B.A.Y.M.E.T.R.I.C.S.

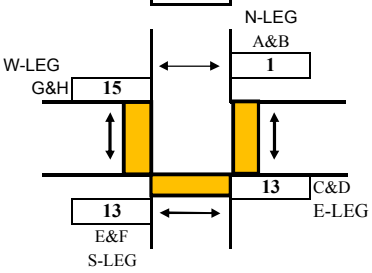
DESTRIAN MOVEMENT SUMMARY

1825 PARK STREET HOTEL TRAFFIC STUDY		SURVEY DATE:	8/23/2017
PARK STREET -	DRIVEWAY (N)	DAY:	WEDNESDAY
BLANDING AVENUE		JURISDICTION:	ALAMEDA
7:00 AM TO	9:00 AM	FILE:	3708049-3AM

IR
08:30 AM DRIVEWAY (N)



PEAK HOUR
TOTAL PEDESTRIAN VOLUMES
42



PARK STREET
CROSSWALK
SIDEWALK
STOP CONTROL LINE
STOP
J-WALK IN RED

BY LEG:		BY DIRECTION:	
N-LEG	1	NB(D+G)	11
S-LEG	13	SB(C+H)	17
E-LEG	13	EB(A+F)	4
W-LEG	15	WB(B+E)	10

IOD	NORTH X-WALK		EAST X-WALK		SOUTH X-WALK		WEST X-WALK		
To	*A* *	*B* *	*C*	*D*	*E*	*F*	*G*	*H*	*TOTAL*
SURVEY DATA									
07:15 AM	0	0	2	1	1	1	2	2	*9*
07:30 AM	0	0	2	1	3	2	4	2	*14*
07:45 AM	0	0	4	3	4	3	5	3	*22*
08:00 AM	0	1	7	5	7	4	5	4	*33*
08:15 AM	0	1	7	5	8	5	7	6	*39*
08:30 AM	0	1	11	5	12	6	11	10	*56*
08:45 AM	0	1	13	5	14	6	13	11	*63*
09:00 AM	0	1	14	9	16	6	14	11	*71*
TOTAL BY PERIOD									
07:15 AM	0	0	2	1	1	1	2	2	*9*
07:30 AM	0	0	0	0	2	1	2	0	*5*
07:45 AM	0	0	2	2	1	1	1	1	*8*
08:00 AM	0	1	3	2	3	1	0	1	*11*
08:15 AM	0	0	0	0	1	1	2	2	*6*
08:30 AM	0	0	4	0	4	1	4	4	*17*
08:45 AM	0	0	2	0	2	0	2	1	*7*
09:00 AM	0	0	1	4	2	0	1	0	*8*
HOURLY TOTALS									
08:00 AM	0	1	7	5	7	4	5	4	*33*
08:15 AM	0	1	5	4	7	4	5	4	*30*
08:30 AM	0	1	9	4	9	4	7	8	*42*
08:45 AM	0	1	9	2	10	3	8	8	*41*
09:00 AM	0	0	7	4	9	2	9	7	*38*

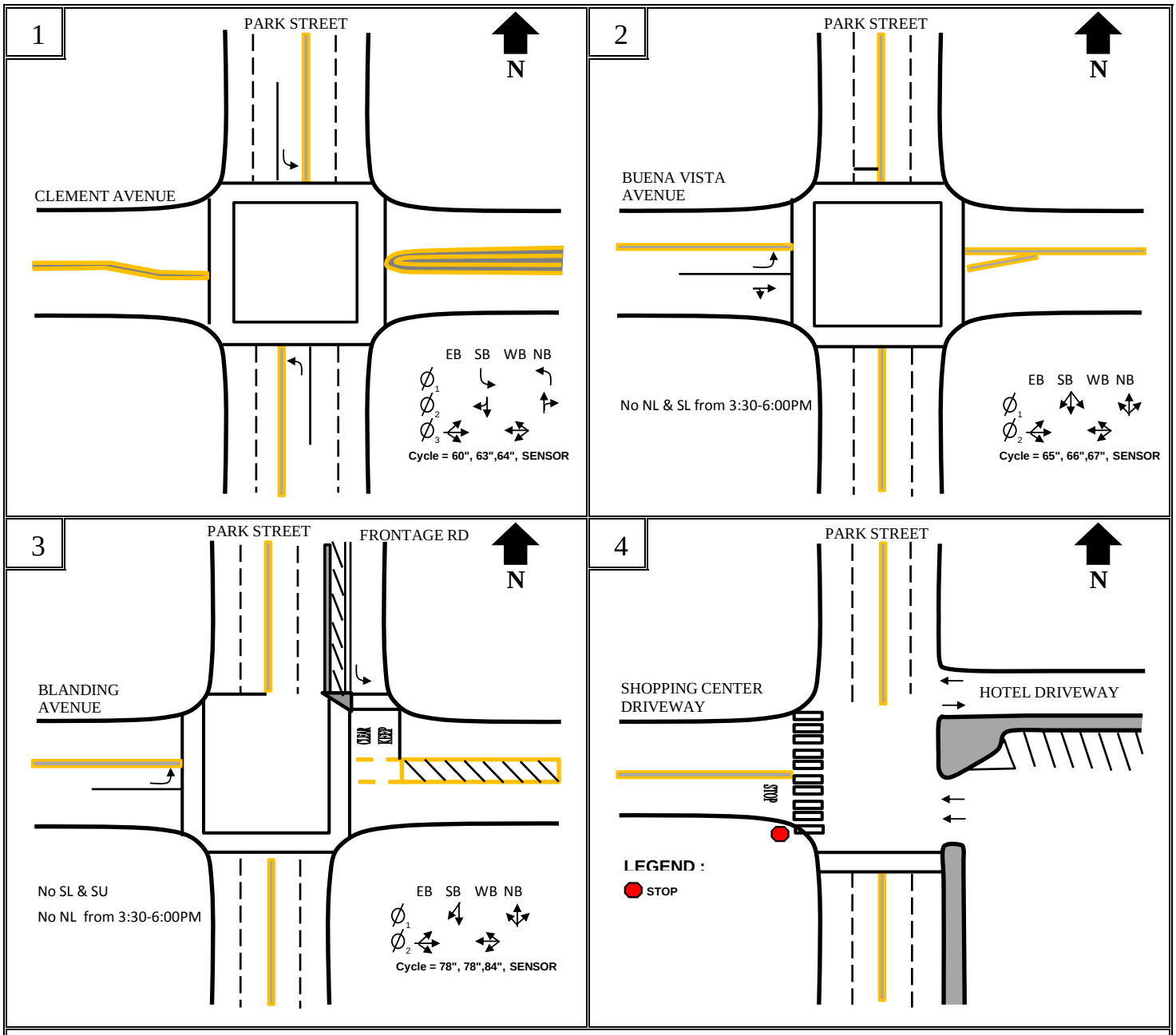
Tel : (510) 232-1271 *Fax: (510) 232-1272*

8:30 AM					
TION	NB	SB	EB	WB	TOTAL
	11	17	4	10	**42**
	N-LEG	S-LEG	E-LEG	W-LEG	TOTAL
	1	13	13	15	**42**

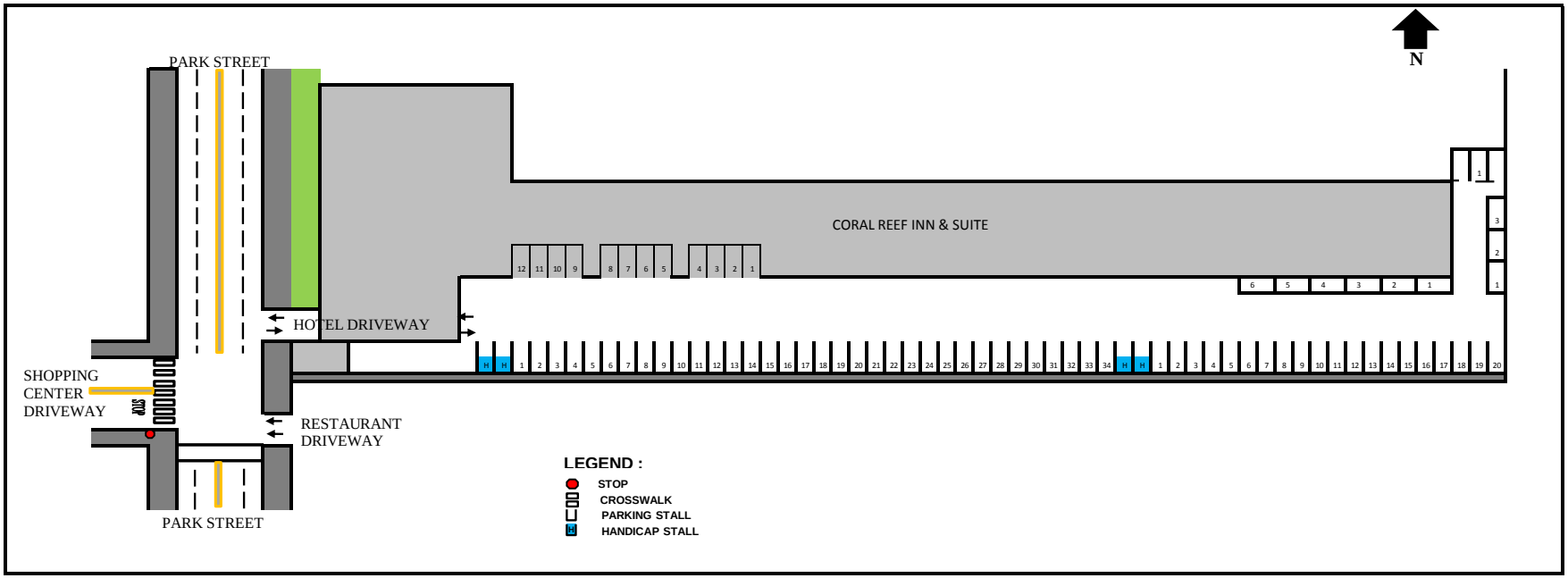
BAYMETRICS

INTERSECTION GEOMETRY & TRAFFIC CONTROL PLAN

PROJECT NUMBER: 3708049 JURISDICTION: ALAMEDA DATE: 8/23/2017 WEDNESDAY



TEL: (510) 232 - 1271 EMAIL: BAYMETRICS@GMAIL.COM


N
PARK STREET
CORAL REEF INN & SUITE
HOTEL DRIVEWAY
SHOPPING
CENTER
DRIVEWAY
STOP
RESTAURANT
DRIVEWAY
PARK STREET
LEGEND :
STOP
CROSSWALK
PARKING STALL
HANDICAP STALL

BAYMETRICS

ON - STREET PARKING OCCUPANCY SURVEY SUMMARY

PROJECT: 1825 PARK STREET TRAFFIC STUDY **FILE NUMBER:** 3708049

SURVEY AREA: BOUNDED BY BLANDING AVENUE; OAK STREET; EAGLE AVENUE & EVERETT STREET

SURVEY DATE: 8/23/2017 **SURVEY DAY:** WEDNESDAY **SURVEY TIME:** 7:00 PM TO 9:00 PM

SURVEY DATA (BLOCKFACES)

1. Along Blanding Avenue

	a. from Oak Street to Park Street												b. from Park Street to Everett Street											
Time	Stall	North Side (Top)						South Side (Bottom)					Stall	North Side (Top)						South Side (Bottom)				
			DW						DW						DW						DW			
	Space	NP	NP	24				NP	NP	21			Space	NP	NP	12				NP	NP	20		
7:00-8:00 PM	Occupied			8						6			Occupied			6						9		
8:00-9:00 PM				7						6						4						6		

2. Along Clement Avenue

	a. from Oak Street to Park Street												b. from Park Street to Everett Street											
Time	Stall	North Side (Top)						South Side (Bottom)					Stall	North Side (Top)						South Side (Bottom)				
			DW						DW						DW						DW			
	Space	NP	NP	18				NP	NP	12			Space	NP	NP	13	1	2		NP	NP	12		
7:00-8:00 PM	Occupied			8						7			Occupied			9						10		
8:00-9:00 PM				4						4						9						8		

3. Along Eagle Avenue

	a. from Oak Street to Park Street												b. from Park Street to Everett Street											
Time	Stall	North Side (Top)						South Side (Bottom)					Stall	North Side (Top)						South Side (Bottom)				
			DW						DW						DW						DW			
	Space	NP	NP	16				NP	NP	15			Space	NP	NP	15				NP	NP	15		
7:00-8:00 PM	Occupied			14						14			Occupied			9						9		
8:00-9:00 PM				15					2	15						8						9		

4. Along Oak Street

	a. from Blanding Avenue to Clement Avenue												b. from Clement Avenue to Eagle Avenue											
Time	Stall	East Side (Left)						West Side (Right)					Stall	East Side (Left)						West Side (Right)				
			DW		M				DW						DW						DW			
	Space	NP	NP	5	4	1		NP	NP				Space	NP	NP					NP	NP	10		
7:00-8:00 PM	Occupied			1									Occupied									3		
8:00-9:00 PM				0																		2		

5. Along Park Street

	a. from Blanding Avenue to Clement Avenue												b. from Clement Avenue to Eagle Avenue											
Time	Stall	East Side (Left)						West Side (Right)					Stall	East Side (Left)						West Side (Right)				
			DW						DW						DW						DW			
	Space	NP	NP					NP	NP	1			Space	NP	NP	1				NP	NP	3		
7:00-8:00 PM	Occupied									0			Occupied			1						0		
8:00-9:00 PM										0						1						0		

6. Along Everett Street

	a. from Blanding Avenue to Clement Avenue												b. from Clement Avenue to Eagle Avenue											
Time	Stall	East Side (Left)						West Side (Right)					Stall	East Side (Left)						West Side (Right)				
			DW						DW						DW						DW			
	Space	NP	NP	4	1			NP	NP	7			Space	NP	NP	9				NP	NP	11		
7:00-8:00 PM	Occupied			2						3			Occupied			4						3		
8:00-9:00 PM				2						5						4						2		

SUMMARY (BLOCKFACES)

1. Along Blanding Avenue

Time	Stall	North	South	Total	% Occupied
	Space	36	41	77	
7:00-8:00 PM	Occupied*	14	15	29	37.7%
8:00-9:00 PM		11	12	23	29.9%
Max Occupied occur @ 7:00-8:00 PM				29	37.7%

2. Along Clement Avenue

Time	Stall	North	South	Total	% Occupied
	Space	34	24	58	
7:00-8:00 PM	Occupied*	17	17	34	58.6%
8:00-9:00 PM		13	12	25	43.1%
Max Occupied occur @ 7:00-8:00 PM				34	58.6%

3. Along Eagle Avenue

Time	Stall	North	South	Total	% Occupied
	Space	31	30	61	
7:00-8:00 PM	Occupied*	23	23	46	75.4%
8:00-9:00 PM		23	26	49	80.3%
Max Occupied occur @ 8:00-9:00 PM				49	80.3%

4. Along Oak Street

Time	Stall	East	West	Total	% Occupied
	Space	10	10	20	
7:00-8:00 PM	Occupied*	1	3	4	20.0%
8:00-9:00 PM		0	2	2	10.0%
Max Occupied occur @ 7:00-8:00 PM				4	20.0%

5. Along Park Street

Time	Stall	East	West	Total	% Occupied
	Space	1	4	5	
7:00-8:00 PM	Occupied*	1	0	1	20.0%
8:00-9:00 PM		1	0	1	20.0%
Max Occupied occur @ 7:00-8:00 PM				1	20.0%

6. Along Everett Street

Time	Stall	East	West	Total	% Occupied
	Space	14	18	32	
7:00-8:00 PM	Occupied*	6	6	12	37.5%
8:00-9:00 PM		6	7	13	40.6%
Max Occupied occur @ 8:00-9:00 PM				13	40.6%

LEGEND:

- Estimated Parking Spaces
- General Parking Meter
- Marked Space
- Red Curb
- Yellow Curb
- White Curb
- Handicap Stall
- Green Curb (30 Min Parking)
- Motocycle
- Driveway

Parking Occupancy Summary

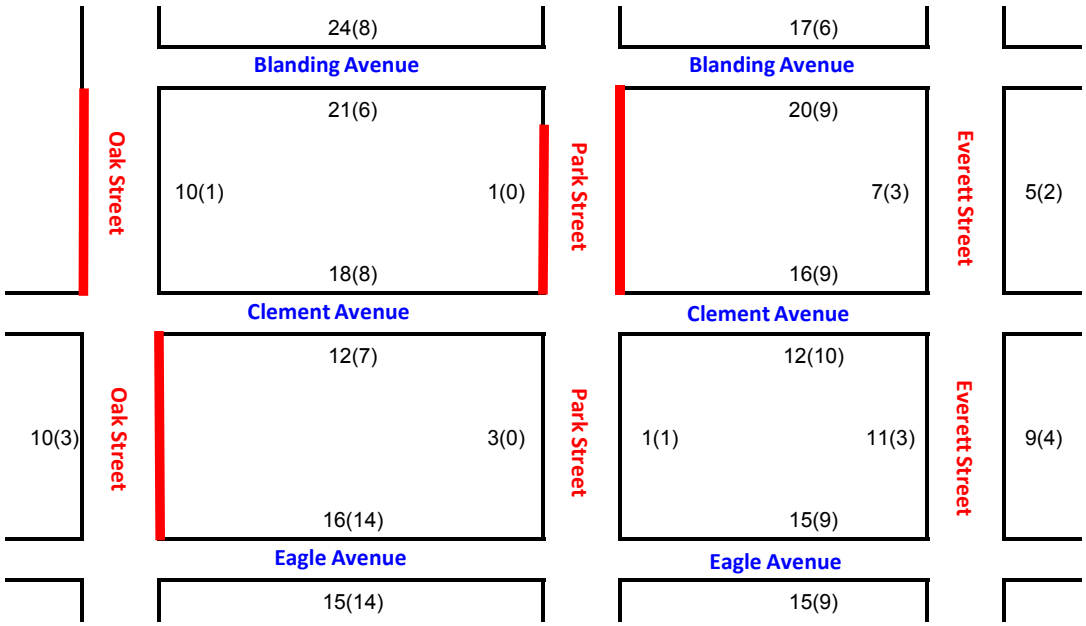
Time	Stall	N-S	E-W	Total	% Occupied
	Space	196	57	253	
7:00-8:00 PM	Occupied*	109	17	126	49.8%
8:00-9:00 PM		97	16	113	44.7%
Max Occupied occur @ 7:00-8:00 PM				126	49.8%

* Included Illegal & Driveway Parking

TEL: (510) 232 - 1271 EMAIL:BAYMETRICS@GMAIL.COM

On-Street Parking Occupancy - Suppy & Occupied Diagram

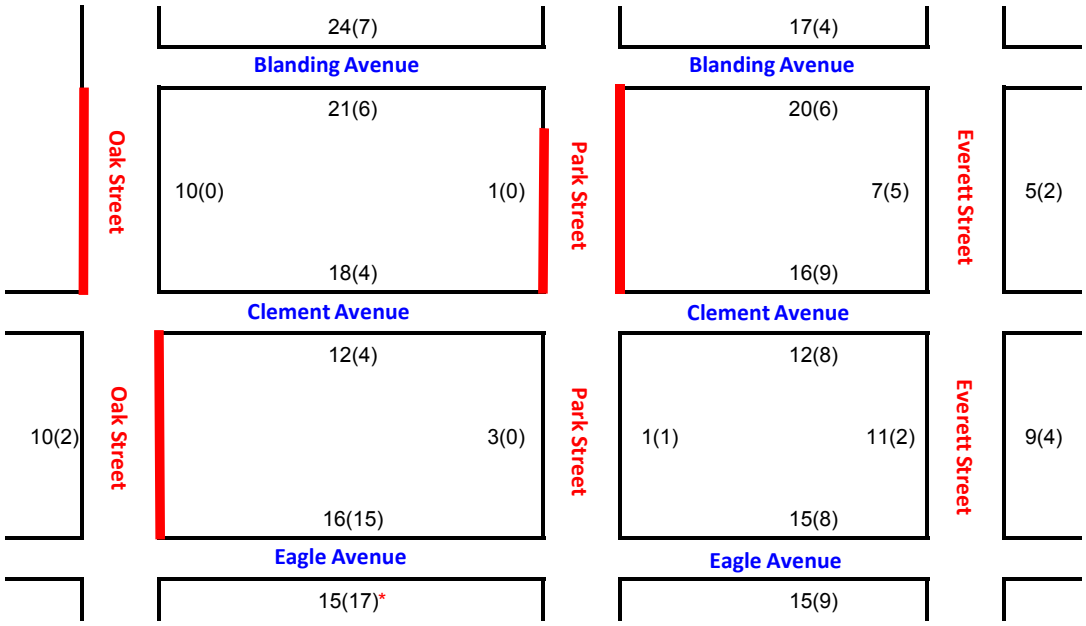
7:00PM - 8:00PM



Note: * Including Vehicles that parked on Driveway & Red Curb

xx (yy) = Supply (Occupied)

8:00PM - 9:00PM



Note: * Including Vehicles that parked on Driveway & Red Curb

xx (yy) = Supply (Occupied)

Appendix B INTERSECTION LOS ANALYSIS: EXISTING CONDITIONS LOS CALCULATION SHEETS

AMG ADVANCED MOBILITY GROUP

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	149	31	10	267	29	14	617	20	16	344	25
Future Volume (vph)	174	149	31	10	267	29	14	617	20	16	344	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.99			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.97			0.99			1.00			0.99	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1761	1805			1831			3477			3414	
Flt Permitted	0.43	1.00			0.99			0.94			0.93	
Satd. Flow (perm)	794	1805			1816			3289			3166	
Peak-hour factor, PHF	0.86	0.86	0.86	0.81	0.81	0.81	0.96	0.96	0.96	0.93	0.93	0.93
Adj. Flow (vph)	202	173	36	12	330	36	15	643	21	17	370	27
RTOR Reduction (vph)	0	13	0	0	6	0	0	4	0	0	9	0
Lane Group Flow (vph)	202	196	0	0	372	0	0	675	0	0	406	0
Confl. Peds. (#/hr)	12		24	24		12	29		23	23		29
Confl. Bikes (#/hr)						4						3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	22.5	22.5			22.5			30.5			30.5	
Effective Green, g (s)	22.0	22.0			22.0			30.0			30.0	
Actuated g/C Ratio	0.37	0.37			0.37			0.50			0.50	
Clearance Time (s)	3.5	3.5			3.5			3.5			3.5	
Lane Grp Cap (vph)	291	661			665			1644			1583	
v/s Ratio Prot		0.11										
v/s Ratio Perm	c0.25				0.20			c0.21			0.13	
v/c Ratio	0.69	0.30			0.56			0.41			0.26	
Uniform Delay, d1	16.1	13.5			15.1			9.4			8.6	
Progression Factor	1.00	1.00			1.00			1.00			2.28	
Incremental Delay, d2	12.8	1.1			3.4			0.8			0.4	
Delay (s)	29.0	14.7			18.5			10.2			20.0	
Level of Service	C	B			B			B			B	
Approach Delay (s)		21.7			18.5			10.2			20.0	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	41	8	7	100	207	14	801	6	86	419	78
Future Volume (vph)	267	41	8	7	100	207	14	801	6	86	419	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		1.00			0.91		1.00	1.00		1.00	0.98	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1759			1676		1755	3534		1752	3402	
Flt Permitted		0.48			0.99		0.45	1.00		0.95	1.00	
Satd. Flow (perm)		881			1661		828	3534		1752	3402	
Peak-hour factor, PHF	0.69	0.69	0.69	0.92	0.92	0.92	0.97	0.97	0.97	0.91	0.91	0.91
Adj. Flow (vph)	387	59	12	8	109	225	14	826	6	95	460	86
RTOR Reduction (vph)	0	2	0	0	115	0	0	1	0	0	26	0
Lane Group Flow (vph)	0	456	0	0	227	0	14	831	0	95	520	0
Confl. Peds. (#/hr)	5		1	1		5	12		11	11		12
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot	NA	
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8			6					
Actuated Green, G (s)		23.5			23.5		19.5	19.5		6.5	29.5	
Effective Green, g (s)		23.0			23.0		19.0	19.0		5.5	29.0	
Actuated g/C Ratio		0.38			0.38		0.32	0.32		0.09	0.48	
Clearance Time (s)		3.5			3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)		337			636		262	1119		160	1644	
v/s Ratio Prot								c0.24		c0.05	0.15	
v/s Ratio Perm		c0.52			0.14		0.02					
v/c Ratio		1.35			0.36		0.05	0.74		0.59	0.32	
Uniform Delay, d1		18.5			13.2		14.2	18.3		26.2	9.5	
Progression Factor		1.00			1.00		0.67	0.67		0.64	0.81	
Incremental Delay, d2		177.4			1.6		0.3	4.0		13.5	0.4	
Delay (s)		195.9			14.8		9.9	16.2		30.4	8.1	
Level of Service		F			B		A	B		C	A	
Approach Delay (s)		195.9			14.8			16.1			11.4	
Approach LOS		F			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	50.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SWL2
Lane Configurations												
Traffic Volume (vph)	236	17	8	16	65	330	3	1285	15	532	195	2
Future Volume (vph)	236	17	8	16	65	330	3	1285	15	532	195	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0	3.5		4.0		4.0		3.5
Lane Util. Factor	1.00	1.00			1.00	1.00		0.95		0.95		1.00
Frpb, ped/bikes	1.00	0.99			1.00	0.99		1.00		0.99		1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Frt	1.00	0.95			1.00	0.85		1.00		0.96		1.00
Flt Protected	0.95	1.00			0.99	1.00		1.00		1.00		0.95
Satd. Flow (prot)	1785	1773			1788	1518		3531		3357		1805
Flt Permitted	0.70	1.00			0.96	1.00		0.95		1.00		0.95
Satd. Flow (perm)	1314	1773			1726	1518		3368		3357		1805
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.98	0.98	0.98	0.87	0.87	0.25
Adj. Flow (vph)	257	18	9	18	71	363	3	1311	15	611	224	8
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	62	0	0
Lane Group Flow (vph)	257	20	0	0	89	363	0	1329	0	773	0	8
Confl. Peds. (#/hr)	1		13	13		1	15		13		15	
Confl. Bikes (#/hr)									8		1	
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	2%	2%	2%	2%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		NA		Prot
Protected Phases		4			4			6		2		3
Permitted Phases	4			4		4	6					
Actuated Green, G (s)	16.0	16.0			16.0	16.0		28.8		28.8		4.7
Effective Green, g (s)	16.0	15.5			15.5	16.0		28.3		28.3		4.7
Actuated g/C Ratio	0.27	0.26			0.26	0.27		0.47		0.47		0.08
Clearance Time (s)	3.5	3.5			3.5	3.5		3.5		3.5		3.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	350	458			445	404		1588		1583		141
v/s Ratio Prot		0.01								0.23		c0.00
v/s Ratio Perm	0.20				0.05	c0.24		c0.39				
v/c Ratio	0.73	0.04			0.20	0.90		0.84		0.49		0.06
Uniform Delay, d1	20.1	16.7			17.4	21.2		13.8		10.9		25.6
Progression Factor	1.00	1.00			1.00	1.00		1.13		1.00		1.00
Incremental Delay, d2	7.8	0.0			0.2	22.0		2.0		1.1		0.2
Delay (s)	27.8	16.7			17.6	43.2		17.7		12.0		25.8
Level of Service	C	B			B	D		B		B		C
Approach Delay (s)		26.8			38.1			17.7		12.0		
Approach LOS		C			D			B		B		

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	311	1	5	187	0	1	0	5	0	0	0
Future Vol, veh/h	0	311	1	5	187	0	1	0	5	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	338	1	5	203	0	1	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	339	0	0	553	553	339	555	553	203
Stage 1	-	-	-	-	-	-	339	339	-	214	214	-
Stage 2	-	-	-	-	-	-	214	214	-	341	339	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1369	-	-	1220	-	-	444	441	703	442	441	838
Stage 1	-	-	-	-	-	-	676	640	-	788	725	-
Stage 2	-	-	-	-	-	-	788	725	-	674	640	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1369	-	-	1220	-	-	442	439	703	437	439	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	442	439	-	437	439	-
Stage 1	-	-	-	-	-	-	676	640	-	788	721	-
Stage 2	-	-	-	-	-	-	784	721	-	669	640	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	10.7	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	640	1369	-	-	1220	-	-	-
HCM Lane V/C Ratio	0.01	-	-	-	0.004	-	-	-
HCM Control Delay (s)	10.7	0	-	-	8	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	280	45	24	221	43	6	577	34	5	548	58
Future Volume (vph)	215	280	45	24	221	43	6	577	34	5	548	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.99			1.00			0.99			0.99	
Flpb, ped/bikes	0.99	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.98			0.99			0.99	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1768	1830			1824			3481			3501	
Flt Permitted	0.49	1.00			0.95			0.95			0.95	
Satd. Flow (perm)	910	1830			1748			3306			3329	
Peak-hour factor, PHF	0.87	0.87	0.87	0.90	0.90	0.90	0.84	0.84	0.84	0.81	0.81	0.81
Adj. Flow (vph)	247	322	52	27	246	48	7	687	40	6	677	72
RTOR Reduction (vph)	0	10	0	0	11	0	0	7	0	0	14	0
Lane Group Flow (vph)	247	365	0	0	310	0	0	727	0	0	742	0
Confl. Peds. (#/hr)	24		43	43		24	26		82	82		26
Confl. Bikes (#/hr)			3			2			2			1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	22.5	22.5			22.5			30.5			30.5	
Effective Green, g (s)	22.0	22.0			22.0			30.0			30.0	
Actuated g/C Ratio	0.37	0.37			0.37			0.50			0.50	
Clearance Time (s)	3.5	3.5			3.5			3.5			3.5	
Lane Grp Cap (vph)	333	671			640			1653			1664	
v/s Ratio Prot		0.20										
v/s Ratio Perm	c0.27				0.18			0.22			c0.22	
v/c Ratio	0.74	0.54			0.48			0.44			0.45	
Uniform Delay, d1	16.5	15.0			14.6			9.6			9.7	
Progression Factor	1.00	1.00			1.00			1.00			1.15	
Incremental Delay, d2	13.9	3.1			2.6			0.9			0.8	
Delay (s)	30.4	18.2			17.3			10.5			11.9	
Level of Service	C	B			B			B			B	
Approach Delay (s)		23.0			17.3			10.5			11.9	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	76	11	13	80	78	14	811	40	268	629	104
Future Volume (vph)	257	76	11	13	80	78	14	811	40	268	629	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		1.00			0.94		1.00	0.99		1.00	0.98	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799			1726		1762	3531		1787	3467	
Flt Permitted		0.63			0.97		0.35	1.00		0.95	1.00	
Satd. Flow (perm)		1175			1678		650	3531		1787	3467	
Peak-hour factor, PHF	0.89	0.89	0.89	0.86	0.86	0.86	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	289	85	12	15	93	91	16	911	45	291	684	113
RTOR Reduction (vph)	0	2	0	0	50	0	0	6	0	0	22	0
Lane Group Flow (vph)	0	384	0	0	149	0	16	950	0	291	775	0
Confl. Peds. (#/hr)	5		23	23		5	30		62	62		30
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot	NA	
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8			6					
Actuated Green, G (s)		18.5			18.5		22.5	22.5		8.5	34.5	
Effective Green, g (s)		18.0			18.0		22.0	22.0		7.5	34.0	
Actuated g/C Ratio		0.30			0.30		0.37	0.37		0.12	0.57	
Clearance Time (s)		3.5			3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)		352			503		238	1294		223	1964	
v/s Ratio Prot								c0.27		c0.16	0.22	
v/s Ratio Perm		c0.33			0.09		0.02					
v/c Ratio		1.09			0.30		0.07	0.73		1.30	0.39	
Uniform Delay, d1		21.0			16.1		12.3	16.5		26.2	7.3	
Progression Factor		1.00			1.00		0.67	0.65		1.25	0.91	
Incremental Delay, d2		74.5			1.5		0.5	3.2		158.3	0.4	
Delay (s)		95.5			17.6		8.8	13.9		191.0	7.0	
Level of Service		F			B		A	B		F	A	
Approach Delay (s)		95.5			17.6			13.8			56.2	
Approach LOS		F			B			B			E	

Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SWL2
Lane Configurations												
Traffic Volume (vph)	210	69	19	30	136	249	3	1070	37	912	237	9
Future Volume (vph)	210	69	19	30	136	249	3	1070	37	912	237	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0	3.5		4.0		4.0		3.5
Lane Util. Factor	1.00	1.00			1.00	1.00		0.95		0.95		1.00
Frpb, ped/bikes	1.00	0.99			1.00	0.99		1.00		0.98		1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Frt	1.00	0.97			1.00	0.85		1.00		0.97		1.00
Flt Protected	0.95	1.00			0.99	1.00		1.00		1.00		0.95
Satd. Flow (prot)	1781	1806			1841	1560		3548		3396		1805
Flt Permitted	0.57	1.00			0.94	1.00		0.95		1.00		0.95
Satd. Flow (perm)	1077	1806			1744	1560		3379		3396		1805
Peak-hour factor, PHF	0.90	0.90	0.90	0.85	0.85	0.85	0.77	0.77	0.77	0.92	0.92	0.32
Adj. Flow (vph)	233	77	21	35	160	293	4	1390	48	991	258	28
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	38	0	0
Lane Group Flow (vph)	233	82	0	0	195	293	0	1442	0	1211	0	28
Confl. Peds. (#/hr)	3		19	19		3	48		30		48	
Confl. Bikes (#/hr)			11						3			
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		NA		Prot
Protected Phases		4			4			6		2		3
Permitted Phases	4			4		4	6					
Actuated Green, G (s)	15.4	15.4			15.4	15.4		29.4		29.4		4.7
Effective Green, g (s)	15.4	14.9			14.9	15.4		28.9		28.9		4.7
Actuated g/C Ratio	0.26	0.25			0.25	0.26		0.48		0.48		0.08
Clearance Time (s)	3.5	3.5			3.5	3.5		3.5		3.5		3.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	276	448			433	400		1627		1635		141
v/s Ratio Prot		0.05								0.36		c0.02
v/s Ratio Perm	c0.22				0.11	0.19		c0.43				
v/c Ratio	0.84	0.18			0.45	0.73		0.89		0.74		0.20
Uniform Delay, d1	21.2	17.8			19.1	20.4		14.1		12.5		25.9
Progression Factor	1.00	1.00			1.00	1.00		0.63		1.00		1.00
Incremental Delay, d2	20.4	0.2			0.7	6.8		5.4		3.1		0.7
Delay (s)	41.5	18.0			19.8	27.2		14.3		15.6		26.6
Level of Service	D	B			B	C		B		B		C
Approach Delay (s)		34.6			24.3			14.3		15.6		
Approach LOS		C			C			B		B		

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	337	1	8	190	0	1	0	7	0	0	0
Future Vol, veh/h	0	337	1	8	190	0	1	0	7	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	366	1	9	207	0	1	0	8	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	207	0	0	367	0	0	591	591	367	595	591	207
Stage 1	-	-	-	-	-	-	367	367	-	224	224	-
Stage 2	-	-	-	-	-	-	224	224	-	371	367	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1364	-	-	1192	-	-	419	420	678	416	420	833
Stage 1	-	-	-	-	-	-	653	622	-	779	718	-
Stage 2	-	-	-	-	-	-	779	718	-	649	622	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1364	-	-	1192	-	-	416	416	678	409	416	833
Mov Cap-2 Maneuver	-	-	-	-	-	-	416	416	-	409	416	-
Stage 1	-	-	-	-	-	-	653	622	-	779	712	-
Stage 2	-	-	-	-	-	-	772	712	-	642	622	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	10.8	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	629	1364	-	-	1192	-	-	-
HCM Lane V/C Ratio	0.014	-	-	-	0.007	-	-	-
HCM Control Delay (s)	10.8	0	-	-	8	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Appendix C INTERSECTION LOS ANALYSIS: EXISTING PLUS PROJECT CONDITIONS LOS CALCULATION SHEETS

AMG ADVANCED MOBILITY GROUP

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	149	31	10	267	29	14	626	20	16	350	25
Future Volume (vph)	174	149	31	10	267	29	14	626	20	16	350	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.99			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.97			0.99			1.00			0.99	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1761	1805			1831			3477			3415	
Flt Permitted	0.43	1.00			0.99			0.94			0.93	
Satd. Flow (perm)	794	1805			1816			3289			3167	
Peak-hour factor, PHF	0.86	0.86	0.86	0.81	0.81	0.81	0.96	0.96	0.96	0.93	0.93	0.93
Adj. Flow (vph)	202	173	36	12	330	36	15	652	21	17	376	27
RTOR Reduction (vph)	0	13	0	0	6	0	0	4	0	0	9	0
Lane Group Flow (vph)	202	196	0	0	372	0	0	685	0	0	412	0
Confl. Peds. (#/hr)	12		24	24		12	29		23	23		29
Confl. Bikes (#/hr)						4						3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	22.5	22.5			22.5			30.5			30.5	
Effective Green, g (s)	22.0	22.0			22.0			30.0			30.0	
Actuated g/C Ratio	0.37	0.37			0.37			0.50			0.50	
Clearance Time (s)	3.5	3.5			3.5			3.5			3.5	
Lane Grp Cap (vph)	291	661			665			1644			1583	
v/s Ratio Prot		0.11										
v/s Ratio Perm	c0.25				0.20			c0.21			0.13	
v/c Ratio	0.69	0.30			0.56			0.42			0.26	
Uniform Delay, d1	16.1	13.5			15.1			9.5			8.6	
Progression Factor	1.00	1.00			1.00			1.00			2.24	
Incremental Delay, d2	12.8	1.1			3.4			0.8			0.4	
Delay (s)	29.0	14.7			18.5			10.3			19.6	
Level of Service	C	B			B			B			B	
Approach Delay (s)		21.7			18.5			10.3			19.6	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	43	14	7	103	207	23	801	6	86	419	93
Future Volume (vph)	278	43	14	7	103	207	23	801	6	86	419	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		0.99			0.91		1.00	1.00		1.00	0.97	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1757			1677		1756	3534		1752	3387	
Flt Permitted		0.48			0.99		0.44	1.00		0.95	1.00	
Satd. Flow (perm)		882			1662		815	3534		1752	3387	
Peak-hour factor, PHF	0.69	0.69	0.69	0.92	0.92	0.92	0.97	0.97	0.97	0.91	0.91	0.91
Adj. Flow (vph)	403	62	20	8	112	225	24	826	6	95	460	102
RTOR Reduction (vph)	0	2	0	0	112	0	0	1	0	0	32	0
Lane Group Flow (vph)	0	483	0	0	233	0	24	831	0	95	530	0
Confl. Peds. (#/hr)	5		1	1		5	12		11	11		12
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot	NA	
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8			6					
Actuated Green, G (s)		23.5			23.5		19.5	19.5		6.5	29.5	
Effective Green, g (s)		23.0			23.0		19.0	19.0		5.5	29.0	
Actuated g/C Ratio		0.38			0.38		0.32	0.32		0.09	0.48	
Clearance Time (s)		3.5			3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)		338			637		258	1119		160	1637	
v/s Ratio Prot								c0.24		c0.05	0.16	
v/s Ratio Perm		c0.55			0.14		0.03					
v/c Ratio		1.43			0.37		0.09	0.74		0.59	0.32	
Uniform Delay, d1		18.5			13.3		14.4	18.3		26.2	9.5	
Progression Factor		1.00			1.00		0.66	0.66		0.63	0.79	
Incremental Delay, d2		208.8			1.6		0.6	4.0		13.4	0.5	
Delay (s)		227.3			14.9		10.2	16.1		30.1	8.0	
Level of Service		F			B		B	B		C	A	
Approach Delay (s)		227.3			14.9			16.0			11.2	
Approach LOS		F			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	58.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SWL2
Lane Configurations												
Traffic Volume (vph)	236	17	8	16	65	330	3	1296	15	547	195	2
Future Volume (vph)	236	17	8	16	65	330	3	1296	15	547	195	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0	3.5		4.0		4.0		3.5
Lane Util. Factor	1.00	1.00			1.00	1.00		0.95		0.95		1.00
Frpb, ped/bikes	1.00	0.99			1.00	0.99		1.00		0.99		1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Frt	1.00	0.95			1.00	0.85		1.00		0.96		1.00
Flt Protected	0.95	1.00			0.99	1.00		1.00		1.00		0.95
Satd. Flow (prot)	1785	1773			1788	1518		3531		3361		1805
Flt Permitted	0.70	1.00			0.96	1.00		0.95		1.00		0.95
Satd. Flow (perm)	1314	1773			1726	1518		3368		3361		1805
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.98	0.98	0.98	0.87	0.87	0.25
Adj. Flow (vph)	257	18	9	18	71	363	3	1322	15	629	224	8
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	59	0	0
Lane Group Flow (vph)	257	20	0	0	89	363	0	1340	0	794	0	8
Confl. Peds. (#/hr)	1		13	13		1	15		13		15	
Confl. Bikes (#/hr)									8		1	
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	2%	2%	2%	2%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		NA		Prot
Protected Phases		4			4			6		2		3
Permitted Phases	4			4		4	6					
Actuated Green, G (s)	16.0	16.0			16.0	16.0		28.8		28.8		4.7
Effective Green, g (s)	16.0	15.5			15.5	16.0		28.3		28.3		4.7
Actuated g/C Ratio	0.27	0.26			0.26	0.27		0.47		0.47		0.08
Clearance Time (s)	3.5	3.5			3.5	3.5		3.5		3.5		3.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	350	458			445	404		1588		1585		141
v/s Ratio Prot		0.01								0.24		c0.00
v/s Ratio Perm	0.20				0.05	c0.24		c0.40				
v/c Ratio	0.73	0.04			0.20	0.90		0.84		0.50		0.06
Uniform Delay, d1	20.1	16.7			17.4	21.2		13.9		11.0		25.6
Progression Factor	1.00	1.00			1.00	1.00		1.12		1.00		1.00
Incremental Delay, d2	7.8	0.0			0.2	22.0		1.9		1.1		0.2
Delay (s)	27.8	16.7			17.6	43.2		17.5		12.1		25.8
Level of Service	C	B			B	D		B		B		C
Approach Delay (s)		26.8			38.1			17.5		12.1		
Approach LOS		C			D			B		B		

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	311	4	32	187	0	3	0	24	0	0	0
Future Vol, veh/h	0	311	4	32	187	0	3	0	24	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	338	4	35	203	0	3	0	26	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	342	0	0	613	613	340	626	615	203
Stage 1	-	-	-	-	-	-	340	340	-	273	273	-
Stage 2	-	-	-	-	-	-	273	273	-	353	342	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1369	-	-	1217	-	-	405	408	702	397	407	838
Stage 1	-	-	-	-	-	-	675	639	-	733	684	-
Stage 2	-	-	-	-	-	-	733	684	-	664	638	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1369	-	-	1217	-	-	395	395	702	373	394	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	395	395	-	373	394	-
Stage 1	-	-	-	-	-	-	675	639	-	733	662	-
Stage 2	-	-	-	-	-	-	710	662	-	639	638	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.2	10.8	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	646	1369	-	-	1217	-	-	-
HCM Lane V/C Ratio	0.045	-	-	-	0.029	-	-	-
HCM Control Delay (s)	10.8	0	-	-	8	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	280	45	24	221	43	6	586	34	5	556	58
Future Volume (vph)	215	280	45	24	221	43	6	586	34	5	556	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.99			1.00			0.99			0.99	
Flpb, ped/bikes	0.99	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.98			0.99			0.99	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1768	1830			1824			3482			3502	
Flt Permitted	0.49	1.00			0.95			0.95			0.95	
Satd. Flow (perm)	910	1830			1748			3307			3330	
Peak-hour factor, PHF	0.87	0.87	0.87	0.90	0.90	0.90	0.84	0.84	0.84	0.81	0.81	0.81
Adj. Flow (vph)	247	322	52	27	246	48	7	698	40	6	686	72
RTOR Reduction (vph)	0	10	0	0	11	0	0	7	0	0	13	0
Lane Group Flow (vph)	247	365	0	0	310	0	0	738	0	0	751	0
Confl. Peds. (#/hr)	24		43	43		24	26		82	82		26
Confl. Bikes (#/hr)			3			2			2			1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	22.5	22.5			22.5			30.5			30.5	
Effective Green, g (s)	22.0	22.0			22.0			30.0			30.0	
Actuated g/C Ratio	0.37	0.37			0.37			0.50			0.50	
Clearance Time (s)	3.5	3.5			3.5			3.5			3.5	
Lane Grp Cap (vph)	333	671			640			1653			1665	
v/s Ratio Prot		0.20										
v/s Ratio Perm	c0.27				0.18			0.22			c0.23	
v/c Ratio	0.74	0.54			0.48			0.45			0.45	
Uniform Delay, d1	16.5	15.0			14.6			9.7			9.7	
Progression Factor	1.00	1.00			1.00			1.00			1.13	
Incremental Delay, d2	13.9	3.1			2.6			0.9			0.8	
Delay (s)	30.4	18.2			17.3			10.5			11.7	
Level of Service	C	B			B			B			B	
Approach Delay (s)		23.0			17.3			10.5			11.7	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	79	19	13	80	78	23	811	40	268	629	119
Future Volume (vph)	271	79	19	13	80	78	23	811	40	268	629	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		0.99			0.94		1.00	0.99		1.00	0.98	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795			1726		1762	3531		1787	3455	
Flt Permitted		0.63			0.97		0.34	1.00		0.95	1.00	
Satd. Flow (perm)		1179			1679		640	3531		1787	3455	
Peak-hour factor, PHF	0.89	0.89	0.89	0.86	0.86	0.86	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	304	89	21	15	93	91	26	911	45	291	684	129
RTOR Reduction (vph)	0	4	0	0	50	0	0	6	0	0	26	0
Lane Group Flow (vph)	0	411	0	0	149	0	26	950	0	291	787	0
Confl. Peds. (#/hr)	5		23	23		5	30		62	62		30
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Prot	NA	
Protected Phases		4			8			6		5	2	
Permitted Phases	4			8			6					
Actuated Green, G (s)		18.5			18.5		22.5	22.5		8.5	34.5	
Effective Green, g (s)		18.0			18.0		22.0	22.0		7.5	34.0	
Actuated g/C Ratio		0.30			0.30		0.37	0.37		0.12	0.57	
Clearance Time (s)		3.5			3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)		353			503		234	1294		223	1957	
v/s Ratio Prot								c0.27		c0.16	0.23	
v/s Ratio Perm		c0.35			0.09		0.04					
v/c Ratio		1.16			0.30		0.11	0.73		1.30	0.40	
Uniform Delay, d1		21.0			16.1		12.5	16.5		26.2	7.3	
Progression Factor		1.00			1.00		0.67	0.64		1.24	0.93	
Incremental Delay, d2		100.0			1.5		0.8	3.2		158.1	0.4	
Delay (s)		121.0			17.6		9.3	13.8		190.7	7.2	
Level of Service		F			B		A	B		F	A	
Approach Delay (s)		121.0			17.6			13.7			55.5	
Approach LOS		F			B			B			E	

Intersection Summary			
HCM 2000 Control Delay	47.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SWL2
Lane Configurations												
Traffic Volume (vph)	210	69	19	30	136	249	3	1084	37	925	237	9
Future Volume (vph)	210	69	19	30	136	249	3	1084	37	925	237	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0	3.5		4.0		4.0		3.5
Lane Util. Factor	1.00	1.00			1.00	1.00		0.95		0.95		1.00
Frpb, ped/bikes	1.00	0.99			1.00	0.99		1.00		0.98		1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Frt	1.00	0.97			1.00	0.85		1.00		0.97		1.00
Flt Protected	0.95	1.00			0.99	1.00		1.00		1.00		0.95
Satd. Flow (prot)	1781	1806			1841	1560		3548		3398		1805
Flt Permitted	0.57	1.00			0.94	1.00		0.95		1.00		0.95
Satd. Flow (perm)	1077	1806			1744	1560		3379		3398		1805
Peak-hour factor, PHF	0.90	0.90	0.90	0.85	0.85	0.85	0.77	0.77	0.77	0.92	0.92	0.32
Adj. Flow (vph)	233	77	21	35	160	293	4	1408	48	1005	258	28
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	37	0	0
Lane Group Flow (vph)	233	82	0	0	195	293	0	1460	0	1226	0	28
Confl. Peds. (#/hr)	3		19	19		3	48		30		48	
Confl. Bikes (#/hr)			11						3			
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		NA		Prot
Protected Phases		4			4			6		2		3
Permitted Phases	4			4		4	6					
Actuated Green, G (s)	15.4	15.4			15.4	15.4		29.4		29.4		4.7
Effective Green, g (s)	15.4	14.9			14.9	15.4		28.9		28.9		4.7
Actuated g/C Ratio	0.26	0.25			0.25	0.26		0.48		0.48		0.08
Clearance Time (s)	3.5	3.5			3.5	3.5		3.5		3.5		3.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	276	448			433	400		1627		1636		141
v/s Ratio Prot		0.05								0.36		c0.02
v/s Ratio Perm	c0.22				0.11	0.19		c0.43				
v/c Ratio	0.84	0.18			0.45	0.73		0.90		0.75		0.20
Uniform Delay, d1	21.2	17.8			19.1	20.4		14.2		12.6		25.9
Progression Factor	1.00	1.00			1.00	1.00		0.63		1.00		1.00
Incremental Delay, d2	20.4	0.2			0.7	6.8		5.8		3.2		0.7
Delay (s)	41.5	18.0			19.8	27.2		14.8		15.8		26.6
Level of Service	D	B			B	C		B		B		C
Approach Delay (s)		34.6			24.3			14.8		15.8		
Approach LOS		C			C			B		B		

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	337	4	35	190	0	4	0	32	0	0	0
Future Vol, veh/h	0	337	4	35	190	0	4	0	32	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	366	4	38	207	0	4	0	35	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	207	0	0	371	0	0	651	651	368	669	654	207
Stage 1	-	-	-	-	-	-	368	368	-	283	283	-
Stage 2	-	-	-	-	-	-	283	283	-	386	371	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1364	-	-	1188	-	-	382	388	677	371	386	833
Stage 1	-	-	-	-	-	-	652	621	-	724	677	-
Stage 2	-	-	-	-	-	-	724	677	-	637	620	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1364	-	-	1188	-	-	371	374	677	342	372	833
Mov Cap-2 Maneuver	-	-	-	-	-	-	371	374	-	342	372	-
Stage 1	-	-	-	-	-	-	652	621	-	724	653	-
Stage 2	-	-	-	-	-	-	698	653	-	604	620	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.3	11.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	620	1364	-	-	1188	-	-	-
HCM Lane V/C Ratio	0.063	-	-	-	0.032	-	-	-
HCM Control Delay (s)	11.2	0	-	-	8.1	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	-

Appendix D INTERSECTION LOS ANALYSIS: FUTURE (2040) CONDITIONS LOS CALCULATION SHEETS

AMG ADVANCED MOBILITY GROUP

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	129	25	6	226	18	17	560	18	21	411	43
Future Volume (vph)	150	129	25	6	226	18	17	560	18	21	411	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.99			1.00			0.99	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1761	1809			1839			3477			3397	
Flt Permitted	0.35	1.00			0.99			0.94			0.92	
Satd. Flow (perm)	647	1809			1828			3269			3141	
Peak-hour factor, PHF	0.86	0.86	0.86	0.81	0.81	0.81	0.96	0.96	0.96	0.93	0.93	0.93
Adj. Flow (vph)	174	150	29	7	279	22	18	583	19	23	442	46
RTOR Reduction (vph)	0	15	0	0	6	0	0	3	0	0	8	0
Lane Group Flow (vph)	174	164	0	0	302	0	0	617	0	0	503	0
Confl. Peds. (#/hr)	12		24	24		12	29		23	23		29
Confl. Bikes (#/hr)						4						3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	14.3	14.3			14.3			38.7			38.7	
Effective Green, g (s)	13.8	13.8			13.8			38.2			38.2	
Actuated g/C Ratio	0.23	0.23			0.23			0.64			0.64	
Clearance Time (s)	3.5	3.5			3.5			3.5			3.5	
Vehicle Extension (s)	0.2	0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)	148	416			420			2081			1999	
v/s Ratio Prot		0.09										
v/s Ratio Perm	c0.27				0.17			c0.19			0.16	
v/c Ratio	1.18	0.39			0.72			0.30			0.25	
Uniform Delay, d1	23.1	19.6			21.3			4.9			4.7	
Progression Factor	1.00	1.00			1.00			1.00			2.11	
Incremental Delay, d2	129.0	0.2			4.9			0.4			0.1	
Delay (s)	152.1	19.8			26.2			5.2			10.1	
Level of Service	F	B			C			A			B	
Approach Delay (s)		85.0			26.2			5.2			10.1	
Approach LOS		F			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	438	136	17	12	300	274	32	674	12	170	490	171
Future Volume (vph)	438	136	17	12	300	274	32	674	12	170	490	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.5	4.0		4.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			0.94		1.00	1.00		1.00	0.96	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1768			1727		1770	3527		1752	3325	
Flt Permitted		0.41			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		743			1695		1770	3527		1752	3325	
Peak-hour factor, PHF	0.69	0.69	0.69	0.92	0.92	0.92	0.97	0.97	0.97	0.91	0.91	0.91
Adj. Flow (vph)	635	197	25	13	326	298	33	695	12	187	538	188
RTOR Reduction (vph)	0	1	0	0	26	0	0	1	0	0	29	0
Lane Group Flow (vph)	0	856	0	0	611	0	33	706	0	187	697	0
Confl. Peds. (#/hr)	5		1	1		5	12		11	11		12
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		75.5			75.5		3.2	25.5		8.5	30.3	
Effective Green, g (s)		75.0			75.0		2.7	25.0		7.5	29.8	
Actuated g/C Ratio		0.62			0.62		0.02	0.21		0.06	0.25	
Clearance Time (s)		3.5			3.5		4.0	3.5		3.5	3.5	
Vehicle Extension (s)		0.2			0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)		464			1059		39	734		109	825	
v/s Ratio Prot							0.02	c0.20		c0.11	0.21	
v/s Ratio Perm		c1.15			0.36							
v/c Ratio		1.85			0.58		0.85	0.96		1.72	0.85	
Uniform Delay, d1		22.5			13.2		58.4	47.0		56.2	42.9	
Progression Factor		1.00			1.00		1.06	0.93		1.16	0.76	
Incremental Delay, d2		388.7			0.5		81.8	24.3		347.2	5.4	
Delay (s)		411.2			13.7		144.0	67.9		412.5	38.0	
Level of Service		F			B		F	E		F	D	
Approach Delay (s)		411.2			13.7			71.3			114.7	
Approach LOS		F			B			E			F	

Intersection Summary			
HCM 2000 Control Delay	164.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	108.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SWL2
Lane Configurations												
Traffic Volume (vph)	217	11	7	14	31	323	2	1399	12	788	169	2
Future Volume (vph)	217	11	7	14	31	323	2	1399	12	788	169	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0	3.5		4.0		4.0		3.5
Lane Util. Factor	1.00	1.00			1.00	1.00		0.95		0.95		1.00
Frpb, ped/bikes	1.00	0.99			1.00	0.99		1.00		0.99		1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Frt	1.00	0.94			1.00	0.85		1.00		0.97		1.00
Flt Protected	0.95	1.00			0.98	1.00		1.00		1.00		0.95
Satd. Flow (prot)	1785	1753			1777	1518		3533		3420		1805
Flt Permitted	0.73	1.00			0.95	1.00		0.95		1.00		0.95
Satd. Flow (perm)	1362	1753			1705	1518		3371		3420		1805
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.98	0.98	0.98	0.87	0.87	0.25
Adj. Flow (vph)	236	12	8	15	34	355	2	1428	12	906	194	8
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	27	0	0
Lane Group Flow (vph)	236	14	0	0	49	355	0	1442	0	1073	0	8
Confl. Peds. (#/hr)	1		13	13		1	15		13		15	
Confl. Bikes (#/hr)									8		1	
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	2%	2%	2%	2%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		NA		Prot
Protected Phases		4			4			6		2		3
Permitted Phases	4			4		4	6					
Actuated Green, G (s)	19.1	19.1			19.1	19.1		26.4		26.4		4.0
Effective Green, g (s)	19.1	18.6			18.6	19.1		25.9		25.9		4.0
Actuated g/C Ratio	0.32	0.31			0.31	0.32		0.43		0.43		0.07
Clearance Time (s)	3.5	3.5			3.5	3.5		3.5		3.5		3.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	433	543			528	483		1455		1476		120
v/s Ratio Prot		0.01								0.31		c0.00
v/s Ratio Perm	0.17				0.03	c0.23		c0.43				
v/c Ratio	0.55	0.03			0.09	0.73		0.99		0.73		0.07
Uniform Delay, d1	16.9	14.4			14.7	18.2		16.9		14.1		26.2
Progression Factor	1.00	1.00			1.00	1.00		1.15		1.00		1.00
Incremental Delay, d2	1.4	0.0			0.1	5.7		5.3		3.2		0.2
Delay (s)	18.3	14.4			14.8	23.9		24.8		17.3		26.5
Level of Service	B	B			B	C		C		B		C
Approach Delay (s)		18.0			22.8			24.8		17.3		
Approach LOS		B			C			C		B		

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	586	1	5	498	0	1	0	5	0	0	0
Future Vol, veh/h	0	586	1	5	498	0	1	0	5	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	637	1	5	541	0	1	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	541	0	0	638	0	0	1190	1190	638	1192	1190	541
Stage 1	-	-	-	-	-	-	638	638	-	552	552	-
Stage 2	-	-	-	-	-	-	552	552	-	640	638	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1028	-	-	946	-	-	165	188	477	164	188	541
Stage 1	-	-	-	-	-	-	465	471	-	518	515	-
Stage 2	-	-	-	-	-	-	518	515	-	464	471	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1028	-	-	946	-	-	164	186	477	161	186	541
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	186	-	161	186	-
Stage 1	-	-	-	-	-	-	465	471	-	518	511	-
Stage 2	-	-	-	-	-	-	514	511	-	459	471	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	15.1	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	362	1028	-	-	946	-	-	-
HCM Lane V/C Ratio	0.018	-	-	-	0.006	-	-	-
HCM Control Delay (s)	15.1	0	-	-	8.8	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	281	41	162	25	246	15	21	684	4	0	673	76
Future Volume (vph)	281	41	162	25	246	15	21	684	4	0	673	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.97			1.00			1.00			0.99	
Flpb, ped/bikes	0.99	1.00			1.00			1.00			1.00	
Frt	1.00	0.88			0.99			1.00			0.98	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1760	1597			1836			3494			3394	
Flt Permitted	0.46	1.00			0.96			0.92			1.00	
Satd. Flow (perm)	848	1597			1775			3228			3394	
Peak-hour factor, PHF	0.86	0.86	0.86	0.81	0.81	0.81	0.96	0.96	0.96	0.93	0.93	0.93
Adj. Flow (vph)	327	48	188	31	304	19	22	712	4	0	724	82
RTOR Reduction (vph)	0	36	0	0	4	0	0	1	0	0	9	0
Lane Group Flow (vph)	327	200	0	0	350	0	0	738	0	0	797	0
Confl. Peds. (#/hr)	12		24	24		12	29		23	23		29
Confl. Bikes (#/hr)						4						3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	30.3	30.3			30.3			37.7			37.7	
Effective Green, g (s)	29.8	29.8			29.8			37.2			37.2	
Actuated g/C Ratio	0.40	0.40			0.40			0.50			0.50	
Clearance Time (s)	3.5	3.5			3.5			3.5			3.5	
Vehicle Extension (s)	0.2	0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)	336	634			705			1601			1683	
v/s Ratio Prot		0.13									c0.23	
v/s Ratio Perm	c0.39				0.20			0.23				
v/c Ratio	0.97	0.32			0.50			0.46			0.47	
Uniform Delay, d1	22.2	15.6			17.0			12.4			12.4	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	41.5	0.1			0.2			1.0			1.0	
Delay (s)	63.7	15.7			17.2			13.3			13.4	
Level of Service	E	B			B			B			B	
Approach Delay (s)		43.6			17.2			13.3			13.4	
Approach LOS		D			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	382	293	30	42	359	136	46	800	115	445	681	194
Future Volume (vph)	382	293	30	42	359	136	46	800	115	445	681	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.5	4.0		4.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.97		1.00	0.98		1.00	0.97	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1782			1783		1770	3450		1752	3348	
Flt Permitted		0.48			0.88		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		871			1582		1770	3450		1752	3348	
Peak-hour factor, PHF	0.69	0.69	0.69	0.92	0.92	0.92	0.97	0.97	0.97	0.91	0.91	0.91
Adj. Flow (vph)	554	425	43	46	390	148	47	825	119	489	748	213
RTOR Reduction (vph)	0	1	0	0	10	0	0	9	0	0	20	0
Lane Group Flow (vph)	0	1021	0	0	574	0	47	935	0	489	941	0
Confl. Peds. (#/hr)	5		1	1		5	12		11	11		12
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		71.5			71.5		4.0	29.5		18.5	43.5	
Effective Green, g (s)		71.0			71.0		3.5	29.0		17.5	43.0	
Actuated g/C Ratio		0.55			0.55		0.03	0.22		0.13	0.33	
Clearance Time (s)		3.5			3.5		4.0	3.5		3.5	3.5	
Vehicle Extension (s)		0.2			0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)		475			864		47	769		235	1107	
v/s Ratio Prot							0.03	c0.27		c0.28	0.28	
v/s Ratio Perm		c1.17			0.36							
v/c Ratio		2.15			0.66		1.00	1.22		2.08	0.85	
Uniform Delay, d1		29.5			21.0		63.2	50.5		56.2	40.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		523.9			1.5		131.3	109.1		500.7	6.0	
Delay (s)		553.4			22.5		194.5	159.6		557.0	46.5	
Level of Service		F			C		F	F		F	D	
Approach Delay (s)		553.4			22.5			161.3			218.7	
Approach LOS		F			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	260.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.91		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	132.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SWL2
Lane Configurations												
Traffic Volume (vph)	217	56	7	13	50	324	1	1247	34	1267	286	9
Future Volume (vph)	217	56	7	13	50	324	1	1247	34	1267	286	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0	3.5		4.0		4.0		3.5
Lane Util. Factor	1.00	1.00			1.00	1.00		0.95		0.95		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.99		1.00		0.99		1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Frt	1.00	0.98			1.00	0.85		1.00		0.97		1.00
Flt Protected	0.95	1.00			0.99	1.00		1.00		1.00		0.95
Satd. Flow (prot)	1784	1843			1787	1518		3521		3411		1805
Flt Permitted	0.71	1.00			0.96	1.00		0.93		1.00		0.95
Satd. Flow (perm)	1338	1843			1724	1518		3274		3411		1805
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.98	0.98	0.98	0.87	0.87	0.25
Adj. Flow (vph)	236	61	8	14	55	356	1	1272	35	1456	329	36
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	24	0	0
Lane Group Flow (vph)	236	63	0	0	69	356	0	1308	0	1761	0	36
Confl. Peds. (#/hr)	1		13	13		1	15		13		15	
Confl. Bikes (#/hr)									8		1	
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	2%	2%	2%	2%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		NA		Prot
Protected Phases		4			4			6		2		3
Permitted Phases	4			4		4	6					
Actuated Green, G (s)	21.0	21.0			21.0	21.0		39.5		39.5		4.0
Effective Green, g (s)	21.0	20.5			20.5	21.0		39.0		39.0		4.0
Actuated g/C Ratio	0.28	0.27			0.27	0.28		0.52		0.52		0.05
Clearance Time (s)	3.5	3.5			3.5	3.5		3.5		3.5		3.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	374	503			471	425		1702		1773		96
v/s Ratio Prot		0.03								c0.52		c0.02
v/s Ratio Perm	0.18				0.04	c0.23		0.40				
v/c Ratio	0.63	0.13			0.15	0.84		0.77		0.99		0.38
Uniform Delay, d1	23.6	20.5			20.6	25.4		14.4		17.9		34.3
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	3.5	0.1			0.1	13.4		2.1		19.8		2.5
Delay (s)	27.1	20.6			20.8	38.8		16.5		37.6		36.7
Level of Service	C	C			C	D		B		D		D
Approach Delay (s)		25.6			35.9			16.5		37.6		
Approach LOS		C			D			B		D		

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	698	1	8	591	0	1	0	7	0	0	0
Future Vol, veh/h	0	698	1	8	591	0	1	0	7	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	759	1	9	642	0	1	0	8	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	642	0	0	760	0	0	1419	1419	759	1423	1420	642
Stage 1	-	-	-	-	-	-	759	759	-	660	660	-
Stage 2	-	-	-	-	-	-	660	660	-	763	760	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	943	-	-	852	-	-	114	137	406	114	136	474
Stage 1	-	-	-	-	-	-	399	415	-	452	460	-
Stage 2	-	-	-	-	-	-	452	460	-	397	414	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	943	-	-	852	-	-	113	135	406	110	134	474
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	135	-	110	134	-
Stage 1	-	-	-	-	-	-	399	415	-	452	453	-
Stage 2	-	-	-	-	-	-	445	453	-	390	414	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	17.1	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	307	943	-	-	852	-	-	-
HCM Lane V/C Ratio	0.028	-	-	-	0.01	-	-	-
HCM Control Delay (s)	17.1	0	-	-	9.3	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Appendix E INTERSECTION LOS ANALYSIS: 2040 PLUS PROJECT CONDITIONS LOS CALCULATION SHEETS

AMG ADVANCED MOBILITY GROUP

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	129	25	6	226	18	17	569	18	21	417	43
Future Volume (vph)	150	129	25	6	226	18	17	569	18	21	417	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.99			1.00			0.99	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1761	1809			1839			3477			3398	
Flt Permitted	0.35	1.00			0.99			0.94			0.92	
Satd. Flow (perm)	647	1809			1828			3269			3141	
Peak-hour factor, PHF	0.86	0.86	0.86	0.81	0.81	0.81	0.96	0.96	0.96	0.93	0.93	0.93
Adj. Flow (vph)	174	150	29	7	279	22	18	593	19	23	448	46
RTOR Reduction (vph)	0	15	0	0	6	0	0	2	0	0	8	0
Lane Group Flow (vph)	174	164	0	0	302	0	0	628	0	0	509	0
Confl. Peds. (#/hr)	12		24	24		12	29		23	23		29
Confl. Bikes (#/hr)						4						3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	14.3	14.3			14.3			38.7			38.7	
Effective Green, g (s)	13.8	13.8			13.8			38.2			38.2	
Actuated g/C Ratio	0.23	0.23			0.23			0.64			0.64	
Clearance Time (s)	3.5	3.5			3.5			3.5			3.5	
Vehicle Extension (s)	0.2	0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)	148	416			420			2081			1999	
v/s Ratio Prot		0.09										
v/s Ratio Perm	c0.27				0.17			c0.19			0.16	
v/c Ratio	1.18	0.39			0.72			0.30			0.25	
Uniform Delay, d1	23.1	19.6			21.3			4.9			4.7	
Progression Factor	1.00	1.00			1.00			1.00			2.08	
Incremental Delay, d2	129.0	0.2			4.9			0.4			0.1	
Delay (s)	152.1	19.8			26.2			5.3			10.0	
Level of Service	F	B			C			A			A	
Approach Delay (s)		85.0			26.2			5.3			10.0	
Approach LOS		F			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	449	138	23	12	303	274	41	674	12	170	490	186
Future Volume (vph)	449	138	23	12	303	274	41	674	12	170	490	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.5	4.0		4.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.94		1.00	1.00		1.00	0.96	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1766			1728		1770	3527		1752	3313	
Flt Permitted		0.41			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		742			1694		1770	3527		1752	3313	
Peak-hour factor, PHF	0.69	0.69	0.69	0.92	0.92	0.92	0.97	0.97	0.97	0.91	0.91	0.91
Adj. Flow (vph)	651	200	33	13	329	298	42	695	12	187	538	204
RTOR Reduction (vph)	0	1	0	0	26	0	0	1	0	0	32	0
Lane Group Flow (vph)	0	883	0	0	614	0	42	706	0	187	710	0
Confl. Peds. (#/hr)	5		1	1		5	12		11	11		12
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		75.5			75.5		3.2	25.5		8.5	30.3	
Effective Green, g (s)		75.0			75.0		2.7	25.0		7.5	29.8	
Actuated g/C Ratio		0.62			0.62		0.02	0.21		0.06	0.25	
Clearance Time (s)		3.5			3.5		4.0	3.5		3.5	3.5	
Vehicle Extension (s)		0.2			0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)		463			1058		39	734		109	822	
v/s Ratio Prot							0.02	c0.20		c0.11	0.21	
v/s Ratio Perm		c1.19			0.36							
v/c Ratio		1.91			0.58		1.08	0.96		1.72	0.86	
Uniform Delay, d1		22.5			13.2		58.6	47.0		56.2	43.2	
Progression Factor		1.00			1.00		1.07	0.93		1.16	0.76	
Incremental Delay, d2		416.1			0.5		163.6	24.3		346.7	6.3	
Delay (s)		438.6			13.8		226.4	67.9		412.1	39.1	
Level of Service		F			B		F	E		F	D	
Approach Delay (s)		438.6			13.8			76.8			114.1	
Approach LOS		F			B			E			F	

Intersection Summary			
HCM 2000 Control Delay	174.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	109.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SWL2
Lane Configurations												
Traffic Volume (vph)	217	11	7	14	31	323	2	1410	12	803	169	2
Future Volume (vph)	217	11	7	14	31	323	2	1410	12	803	169	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0	3.5		4.0		4.0		3.5
Lane Util. Factor	1.00	1.00			1.00	1.00		0.95		0.95		1.00
Frpb, ped/bikes	1.00	0.99			1.00	0.99		1.00		0.99		1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Frt	1.00	0.94			1.00	0.85		1.00		0.97		1.00
Flt Protected	0.95	1.00			0.98	1.00		1.00		1.00		0.95
Satd. Flow (prot)	1785	1753			1777	1518		3533		3421		1805
Flt Permitted	0.73	1.00			0.95	1.00		0.95		1.00		0.95
Satd. Flow (perm)	1362	1753			1705	1518		3371		3421		1805
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.98	0.98	0.98	0.87	0.87	0.25
Adj. Flow (vph)	236	12	8	15	34	355	2	1439	12	923	194	8
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	27	0	0
Lane Group Flow (vph)	236	14	0	0	49	355	0	1453	0	1090	0	8
Confl. Peds. (#/hr)	1		13	13		1	15		13		15	
Confl. Bikes (#/hr)									8		1	
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	2%	2%	2%	2%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		NA		Prot
Protected Phases		4			4			6		2		3
Permitted Phases	4			4		4	6					
Actuated Green, G (s)	19.1	19.1			19.1	19.1		26.4		26.4		4.0
Effective Green, g (s)	19.1	18.6			18.6	19.1		25.9		25.9		4.0
Actuated g/C Ratio	0.32	0.31			0.31	0.32		0.43		0.43		0.07
Clearance Time (s)	3.5	3.5			3.5	3.5		3.5		3.5		3.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	433	543			528	483		1455		1476		120
v/s Ratio Prot		0.01								0.32		c0.00
v/s Ratio Perm	0.17				0.03	c0.23		c0.43				
v/c Ratio	0.55	0.03			0.09	0.73		1.00		0.74		0.07
Uniform Delay, d1	16.9	14.4			14.7	18.2		17.0		14.2		26.2
Progression Factor	1.00	1.00			1.00	1.00		1.15		1.00		1.00
Incremental Delay, d2	1.4	0.0			0.1	5.7		6.7		3.4		0.2
Delay (s)	18.3	14.4			14.8	23.9		26.3		17.6		26.5
Level of Service	B	B			B	C		C		B		C
Approach Delay (s)		18.0			22.8			26.3		17.6		
Approach LOS		B			C			C		B		

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	586	4	32	498	0	3	0	24	0	0	0
Future Vol, veh/h	0	586	4	32	498	0	3	0	24	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	637	4	35	541	0	3	0	26	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	541	0	0	641	0	0	1250	1250	639	1263	1252	541
Stage 1	-	-	-	-	-	-	639	639	-	611	611	-
Stage 2	-	-	-	-	-	-	611	611	-	652	641	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1028	-	-	943	-	-	150	173	476	147	172	541
Stage 1	-	-	-	-	-	-	464	470	-	481	484	-
Stage 2	-	-	-	-	-	-	481	484	-	457	469	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1028	-	-	943	-	-	144	164	476	133	163	541
Mov Cap-2 Maneuver	-	-	-	-	-	-	144	164	-	133	163	-
Stage 1	-	-	-	-	-	-	464	470	-	481	458	-
Stage 2	-	-	-	-	-	-	456	458	-	432	469	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	15.3	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	379	1028	-	-	943	-	-	-
HCM Lane V/C Ratio	0.077	-	-	-	0.037	-	-	-
HCM Control Delay (s)	15.3	0	-	-	9	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	281	41	162	25	246	15	21	693	4	0	681	76
Future Volume (vph)	281	41	162	25	246	15	21	693	4	0	681	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.97			1.00			1.00			0.99	
Flpb, ped/bikes	0.99	1.00			1.00			1.00			1.00	
Frt	1.00	0.88			0.99			1.00			0.98	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1760	1597			1836			3495			3395	
Flt Permitted	0.46	1.00			0.96			0.92			1.00	
Satd. Flow (perm)	848	1597			1775			3228			3395	
Peak-hour factor, PHF	0.86	0.86	0.86	0.81	0.81	0.81	0.96	0.96	0.96	0.93	0.93	0.93
Adj. Flow (vph)	327	48	188	31	304	19	22	722	4	0	732	82
RTOR Reduction (vph)	0	35	0	0	4	0	0	1	0	0	9	0
Lane Group Flow (vph)	327	201	0	0	350	0	0	747	0	0	805	0
Confl. Peds. (#/hr)	12		24	24		12	29		23	23		29
Confl. Bikes (#/hr)						4						3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	30.3	30.3			30.3			37.7			37.7	
Effective Green, g (s)	29.8	29.8			29.8			37.2			37.2	
Actuated g/C Ratio	0.40	0.40			0.40			0.50			0.50	
Clearance Time (s)	3.5	3.5			3.5			3.5			3.5	
Vehicle Extension (s)	0.2	0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)	336	634			705			1601			1683	
v/s Ratio Prot		0.13									c0.24	
v/s Ratio Perm	c0.39				0.20			0.23				
v/c Ratio	0.97	0.32			0.50			0.47			0.48	
Uniform Delay, d1	22.2	15.6			17.0			12.4			12.5	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	41.5	0.1			0.2			1.0			1.0	
Delay (s)	63.7	15.7			17.2			13.4			13.5	
Level of Service	E	B			B			B			B	
Approach Delay (s)		43.6			17.2			13.4			13.5	
Approach LOS		D			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	396	296	38	42	362	136	55	800	115	445	681	209
Future Volume (vph)	396	296	38	42	362	136	55	800	115	445	681	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.5	4.0		4.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.97		1.00	0.98		1.00	0.96	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780			1783		1770	3450		1752	3339	
Flt Permitted		0.47			0.88		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		866			1579		1770	3450		1752	3339	
Peak-hour factor, PHF	0.69	0.69	0.69	0.92	0.92	0.92	0.97	0.97	0.97	0.91	0.91	0.91
Adj. Flow (vph)	574	429	55	46	393	148	57	825	119	489	748	230
RTOR Reduction (vph)	0	1	0	0	10	0	0	9	0	0	22	0
Lane Group Flow (vph)	0	1057	0	0	577	0	57	935	0	489	956	0
Confl. Peds. (#/hr)	5		1	1		5	12		11	11		12
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		71.5			71.5		5.0	29.5		18.5	42.5	
Effective Green, g (s)		71.0			71.0		4.5	29.0		17.5	42.0	
Actuated g/C Ratio		0.55			0.55		0.03	0.22		0.13	0.32	
Clearance Time (s)		3.5			3.5		4.0	3.5		3.5	3.5	
Vehicle Extension (s)		0.2			0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)		472			862		61	769		235	1078	
v/s Ratio Prot							0.03	c0.27		c0.28	0.29	
v/s Ratio Perm		c1.22			0.37							
v/c Ratio		2.24			0.67		0.93	1.22		2.08	0.89	
Uniform Delay, d1		29.5			21.1		62.6	50.5		56.2	41.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		564.2			1.5		91.2	109.1		500.7	8.7	
Delay (s)		593.7			22.7		153.8	159.6		557.0	50.5	
Level of Service		F			C		F	F		F	D	
Approach Delay (s)		593.7			22.7			159.3			219.3	
Approach LOS		F			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	272.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.96		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	133.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SWL2
Lane Configurations												
Traffic Volume (vph)	217	56	7	13	50	324	1	1251	34	1282	286	9
Future Volume (vph)	217	56	7	13	50	324	1	1251	34	1282	286	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0	3.5		4.0		4.0		3.5
Lane Util. Factor	1.00	1.00			1.00	1.00		0.95		0.95		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.99		1.00		0.99		1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Frt	1.00	0.98			1.00	0.85		1.00		0.97		1.00
Flt Protected	0.95	1.00			0.99	1.00		1.00		1.00		0.95
Satd. Flow (prot)	1784	1843			1787	1518		3521		3412		1805
Flt Permitted	0.71	1.00			0.96	1.00		0.92		1.00		0.95
Satd. Flow (perm)	1338	1843			1724	1518		3237		3412		1805
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.98	0.98	0.98	0.87	0.87	0.25
Adj. Flow (vph)	236	61	8	14	55	356	1	1277	35	1474	329	36
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	24	0	0
Lane Group Flow (vph)	236	63	0	0	69	356	0	1313	0	1779	0	36
Confl. Peds. (#/hr)	1		13	13		1	15		13		15	
Confl. Bikes (#/hr)									8		1	
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	2%	2%	2%	2%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		NA		Prot
Protected Phases		4			4			6		2		3
Permitted Phases	4			4		4	6					
Actuated Green, G (s)	21.0	21.0			21.0	21.0		39.5		39.5		4.0
Effective Green, g (s)	21.0	20.5			20.5	21.0		39.0		39.0		4.0
Actuated g/C Ratio	0.28	0.27			0.27	0.28		0.52		0.52		0.05
Clearance Time (s)	3.5	3.5			3.5	3.5		3.5		3.5		3.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	374	503			471	425		1683		1774		96
v/s Ratio Prot		0.03								c0.52		c0.02
v/s Ratio Perm	0.18				0.04	c0.23		0.41				
v/c Ratio	0.63	0.13			0.15	0.84		0.78		1.00		0.38
Uniform Delay, d1	23.6	20.5			20.6	25.4		14.5		18.0		34.3
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	3.5	0.1			0.1	13.4		2.4		22.0		2.5
Delay (s)	27.1	20.6			20.8	38.8		17.0		40.0		36.7
Level of Service	C	C			C	D		B		D		D
Approach Delay (s)		25.6			35.9			17.0		40.0		
Approach LOS		C			D			B		D		

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	698	4	35	591	0	4	0	32	0	0	0
Future Vol, veh/h	0	698	4	35	591	0	4	0	32	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	759	4	38	642	0	4	0	35	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	642	0	0	763	0	0	1479	1479	761	1496	1481	642
Stage 1	-	-	-	-	-	-	761	761	-	718	718	-
Stage 2	-	-	-	-	-	-	718	718	-	778	763	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	943	-	-	850	-	-	104	126	405	101	125	474
Stage 1	-	-	-	-	-	-	398	414	-	420	433	-
Stage 2	-	-	-	-	-	-	420	433	-	389	413	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	943	-	-	850	-	-	98	117	405	87	116	474
Mov Cap-2 Maneuver	-	-	-	-	-	-	98	117	-	87	116	-
Stage 1	-	-	-	-	-	-	398	414	-	420	403	-
Stage 2	-	-	-	-	-	-	391	403	-	356	413	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	18.8	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	300	943	-	-	850	-	-	-
HCM Lane V/C Ratio	0.13	-	-	-	0.045	-	-	-
HCM Control Delay (s)	18.8	0	-	-	9.4	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	-