



# Traffic Impact Study for the AC Hotel



Prepared for the City of Santa Rosa

Submitted by  
**W-Trans**

November 15, 2016



**TRAFFIC ENGINEERING  
TRANSPORTATION PLANNING**  
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# Executive Summary

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The proposed AC Hotel would include 142 hotel rooms with a restaurant and retail space to be located at 210 Fifth Street in the City of Santa Rosa. Based on application of standard trip generation rates, the project is anticipated to generate 1,160 daily trips on average, with 75 trips during the a.m. peak hour and 85 trips during the p.m. peak hour.

Peak hour traffic conditions at eight nearby intersections were evaluated to determine the potential impacts associated with development of the project. Under existing conditions, all eight intersections are operating acceptably overall. With the addition of project-generated trips, all study intersections are expected to continue operating acceptably. Under Future conditions, with and without project-generated trips, all study intersections are also expected to operate at acceptable levels of service.

Similarly, existing and planned pedestrian, bicycle and transit access facilities would provide adequate access to the proposed project. However, while pedestrian facilities serving the project site are generally adequate, the project would add pedestrian activity to the intersection of Davis Street/Fourth Street, which has an existing collision rate that is nearly triple the statewide average and includes collisions involving pedestrians. It is recommended that the project application be responsible for constructing bulb-outs on the northwest and southwest corners of Fourth Street/Davis Street intersection.

The adequacy of parking was evaluated within the framework of the Downtown Station Area Specific Plan as well as more detailed shared parking concepts. Application of the Downtown Station Area Specific Plan requirements indicates that the parking supply as proposed is less than what is required; a minor parking reduction of would therefore be necessary. Further analysis of the anticipated demand based on the sizes and mix of components at the site indicates that the project would experience a peak parking demand of 124 spaces. Based on this analysis, it is anticipated that the parking supply as proposed would be adequate if the project provides at least 98 spaces in an off-site parking lot in addition to the 26 planned tandem spaces currently planned for the site.

# Introduction

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This report presents an analysis of the potential traffic and parking impacts that would be associated with development of the proposed AC Hotel project, to be located at 210 Fifth Street in the City of Santa Rosa. The traffic study was completed in accordance with the criteria established by the City of Santa Rosa, and is consistent with standard traffic engineering techniques.

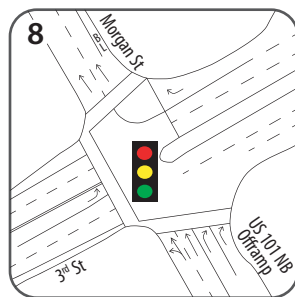
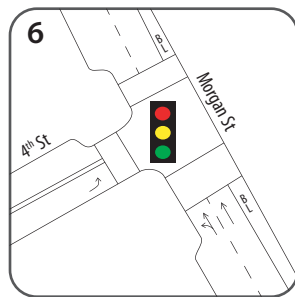
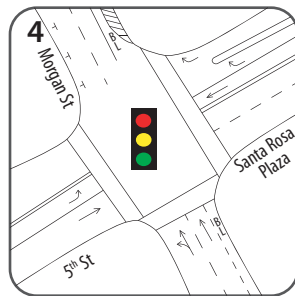
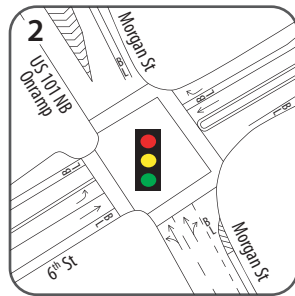
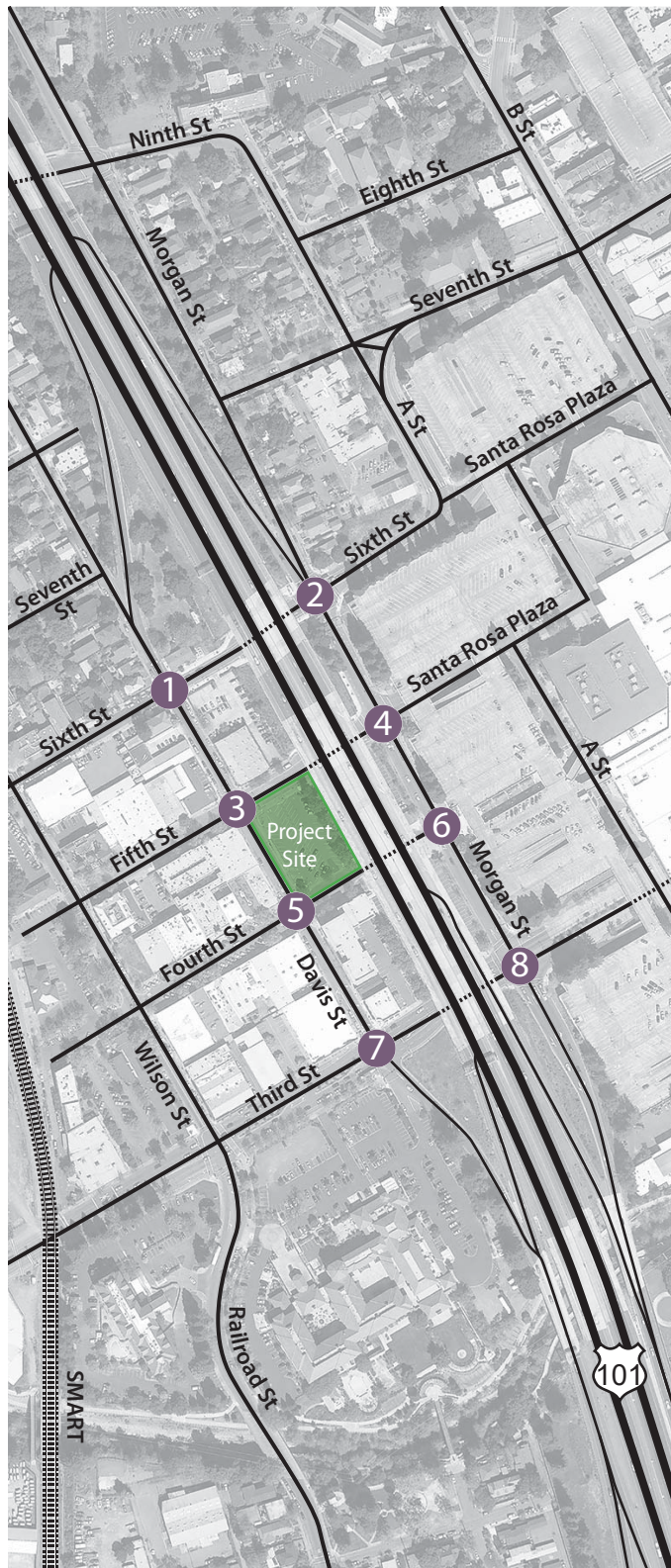
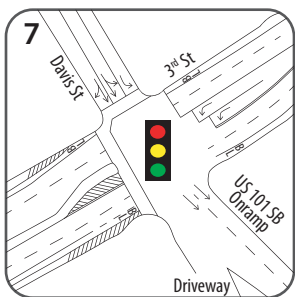
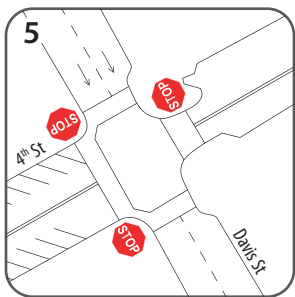
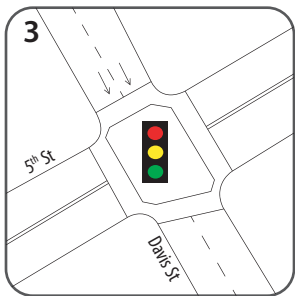
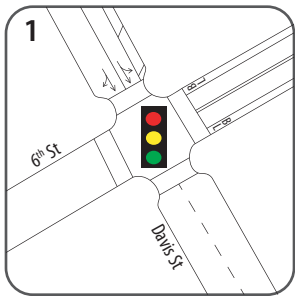
## Prelude

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

## Project Profile

The proposed project includes a 142-room hotel with a restaurant in the Railroad Square neighborhood of Santa Rosa. The project site is located at 210 Fifth Street, as shown in Figure 1.





**LEGEND**  
 ● Study Intersection



**Traffic and Parking Study for the AC Hotel Project**  
**Figure 1 – Study Area and Lane Configurations**



# Transportation Setting

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## Operational Analysis

### Study Area and Periods

The study area consists of the following intersections:

1. Sixth Street/Davis Street-US 101 South Off-ramp
2. Sixth Street/Morgan Street-US 101 North On-ramp
3. Fifth Street/Davis Street
4. Fifth Street/Morgan Street
5. Fourth Street/Davis Street
6. Fourth Street/Morgan Street
7. Third Street/Davis Street-US 101 South On-ramp
8. Third Street/Morgan Street-US 101 North Off-ramp

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

### Study Intersections

**Sixth Street/Davis Street-US 101 South Off-Ramp** is a four-legged signalized intersection with permitted left-turn phasing on the westbound approach. Davis Street is one-way southbound and the north leg serves as the US 101 off-ramp. Marked crosswalks and pedestrian countdown heads are provided on each leg.

**Sixth Street/Morgan Street-US 101 North On-Ramp** is a signalized intersection with four legs and permitted left-turn phasing on the eastbound approach. Morgan Street is one-way in the northbound direction with the north leg connecting to the US 101 on-ramp, which is metered during peak periods. Crosswalks and pedestrian phasing are provided across each leg.

**Fifth Street/Davis Street** is a signalized four-legged intersection with permitted left-turn phasing on the westbound approach. Davis Street is one-way in the southbound direction. Marked crosswalks with pedestrian phasing are provided for each leg.

**Fifth Street/Morgan Street** is a signalized four-legged intersection with permitted left-turn phasing on the eastbound approach. Morgan Street is one-way in the northbound direction. Crosswalks and pedestrian phasing are provided on the south, east, and west legs.

**Fourth Street/Davis Street** is an all-way stop controlled intersection. Davis Street is one-way in the southbound direction. Marked pedestrian crossings are provided on each leg.

**Fourth Street/Morgan Street** is a signalized, three-legged, intersection. Morgan Street is one-way in the northbound direction. There are marked pedestrian crossings at each approach.



**Third Street/Davis Street-US 101 South On-Ramp** is signalized with two-way traffic on Third Street and one-way traffic on Davis Street, and has protected left-turn phasing on the westbound approach. The south leg serves as the US 101 southbound on-ramp, and traffic is metered during peak periods.

**Third Street/Morgan Street-US 101 North Off-Ramp** is a signalized four-leg intersection with protected left-turn phasing on the eastbound approach. The south leg of this intersection is the US 101 northbound off-ramp and Morgan Street is one-way northbound.

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

## Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is May 1, 2011 through April 30, 2016.

As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2012 Collision Data on California State Highways*, California Department of Transportation (Caltrans). For this five-year period, four of the eight study intersections experienced collision rates higher than the statewide average. The collision rate calculations are provided in Appendix A.

**Table 1 – Collision Rates at the Study Intersections**

Study Intersection	Number of Collisions (2011-2016)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. Sixth St/Davis St-US 101 S Off-Ramp	6	<b>0.44</b>	0.27
2. Sixth St/Morgan St-US 101 N On-Ramp	18	<b>0.38</b>	0.27
3. Fifth St/Davis St	0	0.00	0.27
4. Fifth St/Morgan St	11	<b>0.32</b>	0.27
5. Fourth St/Davis St	7	<b>0.62</b>	0.21
6. Fourth St/Morgan St	1	0.04	0.21
7. Third St/Davis St-US 101 S On-ramp	11	0.13	0.27
8. Third St/Morgan St-US 101 N Off-ramp	21	0.22	0.27

Note: c/mve = collisions per million vehicles entering

At the intersection of Sixth Street/Davis Street-US 101 South Off-Ramp, two of the six collisions occurred when vehicles exiting the southbound off-ramp collided as one driver attempted to make a left turn while the other driver proceeded straight. Two of the collisions involved vehicles traveling southbound colliding with a parked vehicle on the north leg of the intersection. Because the intersection was reconfigured in 2013 upon opening of the Sixth Street underpass, and there would be an expected adjustment period as drivers became accustomed to the change; further monitoring will be necessary to determine whether a dominant collision type is occurring at the intersection.

Similarly, the intersection of Sixth Street/Morgan Street-US 101 North On-Ramp was also reconfigured in 2013. Thirteen of the 18 crashes at this location were broadside collisions a result of signal violations, including eight in the two-year period spanning 2015 and 2016 when drivers would presumably have become accustomed to the

new configuration. The dominant pattern of broadside collisions involved vehicles traveling northbound colliding with westbound or eastbound vehicles, with drivers cited for disobeying traffic signals and signs (most likely red-light running). In May 2016, the City adjusted the signal timing to include two-second red clearance times on all phases, which is expected to be an effective counter-measure in reducing the collision potential associated with red-light running.

Broadside crashes were also the primary types of collisions that occurred at the intersection of Fifth Street/Morgan Street, just south of the Sixth Street/Morgan Street-US 101 North Off-Ramp. These collisions were also caused by drivers violating the traffic signal resulting in northbound vehicles colliding with eastbound or westbound vehicles. The City increased yellow clearance times in May of 2016, which may help to reduce the potential for these types of collisions to occur.

The majority of crashes that occurred at the intersection of Fourth Street/Davis Street were broadside collisions between southbound vehicles and eastbound or westbound vehicles as a result of violating the stop sign controls. There were also two rear-end collisions caused by unsafe speed and two collisions involving pedestrians. In addition to increasing enforcement, physical measures such as adding bulb-outs on the northwest and southwest corners of the intersection (similar to those that exist on the northeast and southeast intersection corners) could help to reduce collisions. Bulb-outs would help to increase the visibility of STOP signs on the southbound approach, and would facilitate better lines of sight between drivers and pedestrians.

## Alternative Modes

### Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians in the vicinity of the proposed hotel. Sidewalk coverage is continuous on Davis Street fronting the project site. There are also continuous sidewalks on both sides of Sixth Street from Davis Street to the Santa Rosa Plaza, and both sides of Fifth Street between Wilson Street and the Santa Rosa Plaza. Continuous sidewalk is also provided on both sides of Fourth Street between Wilson Street and Morgan Street, which provides connections to Santa Rosa's Railroad Square where the SMART station is located and the Santa Rosa Plaza. Sidewalk coverage is generally continuous on Third Street though there is a gap on the south side of the street between Davis Street and Morgan Street. Marked crosswalks are available on the north and west legs at Third Street/Davis Street-US 101 South On-ramp and at the north, south, and west legs of Third Street/Morgan Street-US 101 South Off-Ramp.

### Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2012, classifies bikeways into three categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

Guidance for Class IV Bikeways is provided in *Design Information Bulletin Number 89: Class IV Bikeway Guidance (Separated Bikeways/Cycle Tracks)*, Caltrans, 2015.

- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project area, Class II bike lanes exist on Third Street between Wilson Street-Railroad Street and Davis Street-US 101 South On-ramp. There is also a Class II lane on Morgan Street between Third Street and Sixth Street. The Prince Memorial Greenway, a segment of the Santa Rosa Creek Trail System, is a Class I facility which is located approximately one-quarter mile south of the project site. An additional Class II lane is planned for Sixth Street between Davis Street and A Street and the segment from Madison Street to Morgan Street is planned to become a bike boulevard. Further, a portion of the SMART multi-use pathway was recently completed between College Avenue and Eighth Street, and further extensions of the path to the north and south are planned. Table 2 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the City of Santa Rosa’s 2010 *Bicycle and Pedestrian Master Plan*.

<b>Table 2 – Bicycle Facility Summary</b>				
<b>Status Facility</b>	<b>Class</b>	<b>Length (miles)</b>	<b>Begin Point</b>	<b>End Point</b>
<b>Existing</b>				
Prince Memorial Greenway	I	0.60	Olive St	Santa Rosa Ave
SMART path	I	0.50	College Ave	Eighth St
Third St	II	0.07	Wilson St-Railroad St	Davis St-US 101 S On-ramp
Morgan St	II	0.09	Third St	Sixth St
<b>Planned</b>				
SMART path	I	0.07	Third St	Fourth St
Sixth St	II	0.14	Davis St	A St
Third St	II	0.07	B St	Morgan St
Sixth St	Bike Blvd		Madison St	Morgan St

Source: *Bicycle and Pedestrian Master Plan*, City of Santa Rosa, 2010

## **Transit Facilities**

### **Santa Rosa CityBus**

Santa Rosa CityBus provides fixed-route bus service in Santa Rosa. There are four CityBus routes that serve the project area. Route 6 provides loop service from Santa Rosa’s Transit Mall to locations along Third Street, West College Avenue, and Stony Point Road. Route 6 operates Monday through Friday with approximately one-half-hour headways between 6:00 a.m. and 8:00 p.m. Saturday service operates with approximately one-hour headways between 6:00 a.m. and 8:00 p.m. and Sunday service operates between 10:30 a.m. and 5:00 p.m. with one-hour headways.

Route 17 provides loop service from Third Street to northern portions of the City, including Piner Road. Route 17 operates Monday through Friday with approximately one-hour headways between 7:00 a.m. and 8:00 p.m. Saturday service operates between 7:00 a.m. and 8:00 p.m. with one-hour headways and Sunday services runs from 9:30 a.m. to 4:30 p.m. with one-hour headways.

Route 9 serves the southern portion of Santa Rosa with loop service from the Transit Mall to Sebastopol Road and ends at South Wright Road. Route 9 operates Monday through Friday with approximately one-half-hour headways

from 6:30 a.m. to 8:30 p.m. Saturday service operates between 7:30 a.m. and 7:30 p.m. with approximately one-half-hour headways. Route 9 provides Sunday service from 10:30 a.m. to 5:00 p.m. with one-hour headways.

Route 12 provides loop service from the Transit Mall to Roseland and along West Avenue and Corby Avenue. Route 12 operates from 6:00 a.m. to 8:00 p.m. with approximately one-half-hour headways. Saturday service operates from 7:30 a.m. to 7:00 p.m. with approximately one-hour headways and Sunday service runs from 10:00 a.m. to 5:00 p.m. with one-hour headways.

Route 3 provides service between downtown Santa Rosa and the Westside Transfer Center. This route stops on Fifth Street east of Morgan Street. The route operates Monday through Friday from 6:20 a.m. to 8:10 p.m. with approximately 30-minute headways. Saturday service operates from 8:00 a.m. to 7:25 p.m. with approximately one-hour headways. Sunday service operates from 10:45 a.m. to 5:10 p.m. with approximately one-hour headways.

Two bicycles can be carried on most CityBus buses. Bike rack space is on a first come, first served basis. Additional bicycles are allowed on CityBus buses at the discretion of the driver.

### ***Sonoma County Transit***

Sonoma County Transit (SCT) provides fixed route bus service in Sonoma County. Route 22 provides regional service between Santa Rosa and surrounding communities. This route stops on Railroad Street in front of the Courtyard Santa Rosa hotel and operates Monday through Friday with approximately one- to three-hour headways between 7:00 a.m. and 6:30 p.m.

### **Paratransit**

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. Santa Rosa Paratransit is designed to serve the needs of individuals with disabilities within Santa Rosa and the greater Santa Rosa area.

### **SMART Train**

The project site is located about 650 feet to the east of the Sonoma-Marin Area Rail Transit (SMART) Corridor and the Santa Rosa downtown station located in historic Railroad Square. SMART, at buildout, will provide rail service within Sonoma and Marin counties, extending to Cloverdale to the north and Larkspur to the south, connecting with the Larkspur Ferry Terminal. Along with commuter rail service, a multi-use pathway is planned to be installed parallel to the rail corridor. The first phase of rail service running between San Rafael and the Airport Business Park north of Santa Rosa is expected to begin in 2017. The train is expected to operate Monday through Friday from 5:00 a.m. to 8:30 p.m. with 30-minute headways. Weekend service would operate from 8:10 a.m. to 9:40 p.m. with approximately three-hour headways.

# Capacity Analysis

## Intersection Level of Service Methodologies

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

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2000. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The study intersections with stop signs on all approaches were analyzed using the “All-Way Stop-Controlled” Intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole, and is then related to a Level of Service.

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

The ranges of delay associated with the various levels of service are indicated in Table 3.

<b>LOS</b>	<b>All-Way Stop-Controlled</b>	<b>Signalized</b>
A	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach, and wait for vehicle to clear from one or more approaches prior to entering the intersection.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers enter long queues on all approaches.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2000

## Traffic Operation Standards

The City of Santa Rosa's adopted Level of Service (LOS) Standard is contained in *Santa Rosa General Plan 2035*. Standard TD-1 states that the City will try to maintain a Level of Service (LOS) D or better along all major corridors. Exceptions to meeting this standard are allowed where attainment would result in significant environmental degradation; where topography or environmental impacts make the improvement impossible; or where attainment would ensure loss of an area's unique character.

While a corridor level of service is applied by the City in its analysis of the entire City as part of the environmental documentation supporting the General Plan, this type of analysis only provides relevant data when performed on a much longer segment than the ones included as the study area for the project. Therefore, although the City's standard does not specify criteria for intersections, for the purposes of this study a minimum operation of LOS D for the overall operation of intersections was applied. Consideration was given to the need for arterial analysis; however, if all of the affected intersections are or can be expected to operate at LOS D or better, it is reasonable to conclude that the arterial itself will operate at LOS D or better. For purposes of this analysis, arterial analysis would only be performed if any of the affected intersections are or are expected to be operating at LOS E or worse with improvements already planned or funded.

Per the City of Santa Rosa's General Plan policy T-D-1, LOS is calculated based on the average traffic demand over the hour, rather than the peak 15 minutes within the hour.

## Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected in May and September of 2016.

## Intersection Levels of Service

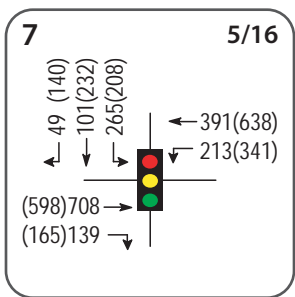
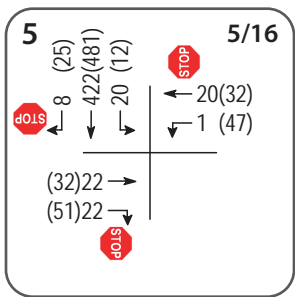
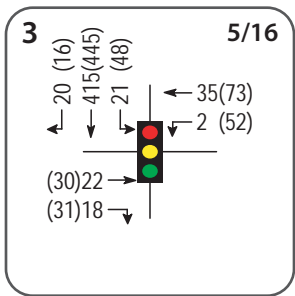
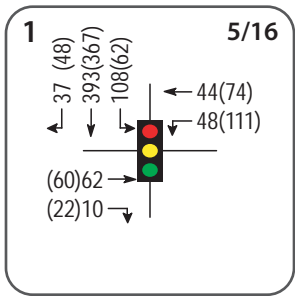
Under existing conditions, all study intersections are operating acceptably. A summary of the intersection level of service calculations is contained in Table 4, Existing traffic volumes are shown in Figure 2, and copies of the Level of Service calculations are provided in Appendix B.

**Table 4 – Existing Peak Hour Intersection Levels of Service**

Study Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Sixth St/Davis St-US 101 S Off-Ramp	11.8	B	11.9	B
2. Sixth St/Morgan St-US 101 N On-Ramp	10.3	B	12.3	B
3. Fifth St/Davis St	4.6	A	6.4	A
4. Fifth St/Morgan St	4.1	A	7.7	A
5. Fourth St/Davis St	8.8	A	9.5	A
6. Fourth St/Morgan St	2.3	A	3.9	A
7. Third St/Davis St-US 101 S On-ramp	12.0	B	22.7	C
8. Third St/Morgan St-US 101 N Off-ramp	13.1	B	23.1	C

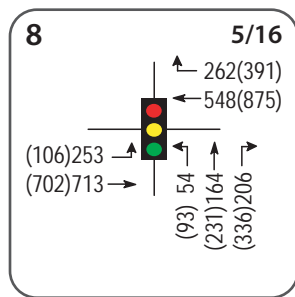
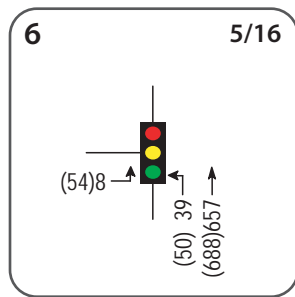
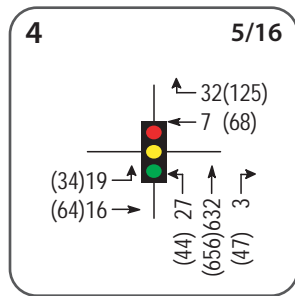
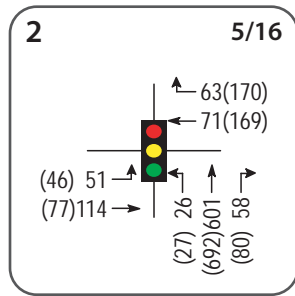
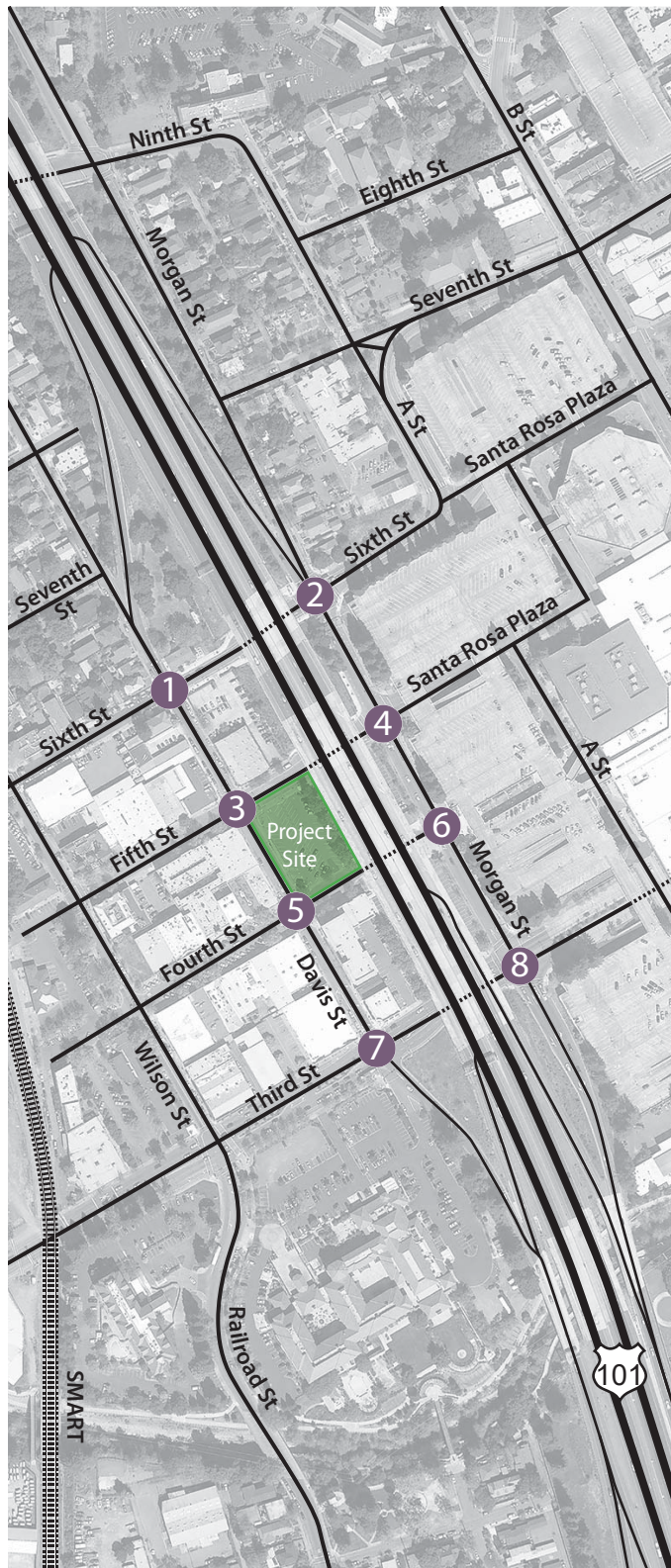
Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service





**LEGEND**

- Study Intersection
- xx AM Peak Hour Volume
- (xx) PM Peak Hour Volume



**Traffic and Parking Study for the AC Hotel Project**  
**Figure 2 – Existing Traffic Volumes**



## Future Conditions

Segment volumes for the horizon year of 2040 were obtained from the County’s travel demand model and translated to turning movement volumes at each of the study intersections using the “Furness” method at each intersection. The Furness method is an iterative process that employs existing turn movement data, existing link volumes, and future link volumes to project likely turning future movement volumes at intersections.

Under the anticipated Future volumes, the study intersections are expected to operate acceptably at LOS C or better during both peak hours. Future operating conditions are summarized in Table 5, and Future volumes are shown in Figure 3.

**Table 5 – Future Peak Hour Intersection Levels of Service**

Study Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Sixth St/Davis St-US 101 S Off-Ramp	16.8	B	28.8	C
2. Sixth St/Morgan St-US 101 N On-Ramp	12.7	B	17.5	B
3. Fifth St/Davis St	11.0	B	7.7	A
4. Fifth St/Morgan St	5.3	A	10.6	B
5. Fourth St/Davis St	18.4	C	23.6	C
6. Fourth St/Morgan St	4.0	A	4.1	A
7. Third St/Davis St-US 101 S On-ramp	34.1	C	31.1	C
8. Third St/Morgan St-US 101 N Off-ramp	16.4	B	23.3	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

## Project Description

The project as proposed includes a 142-room hotel with a 3,300 square foot restaurant and 1,033 square feet of retail space. The proposed project site plan is shown in Figure 4.

## Trip Generation

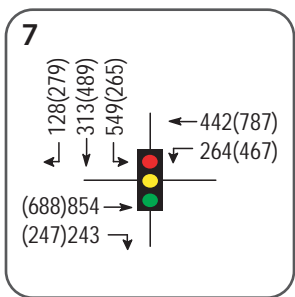
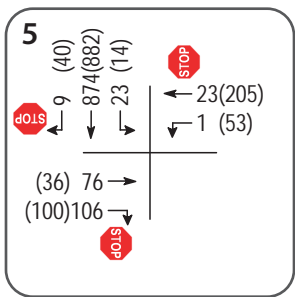
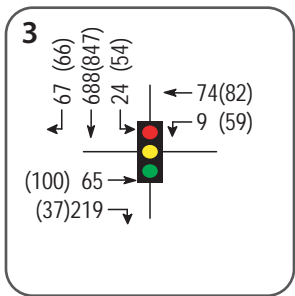
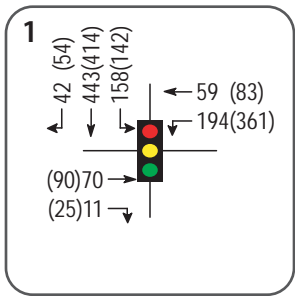
The potential trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 9<sup>th</sup> Edition, 2012 for “Hotel” (ITE LU 310). This land use accounts for restaurants and retail within a hotel. Because the hotel would be located in a downtown area that is reasonably well-served by transit (including future commuter rail) and rideshare services (such as Uber and Lyft), the actual vehicle trips generated are likely to be somewhat less than that resulting from direct application of ITE rates. The ITE rates have been maintained, however, to present a conservative analysis.

The proposed project is expected to generate an average of 1,160 trips per day, including 75 trips during the a.m. peak hour and 85 during the p.m. peak hour, summarized in Table 6.

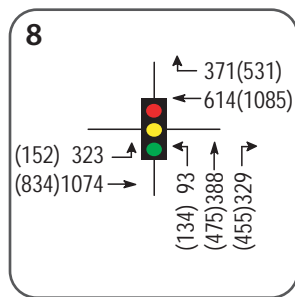
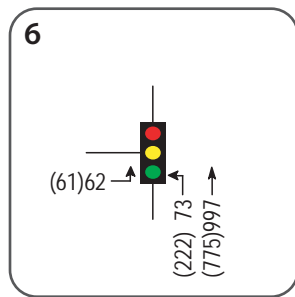
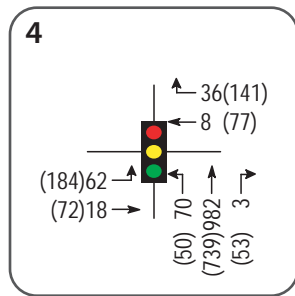
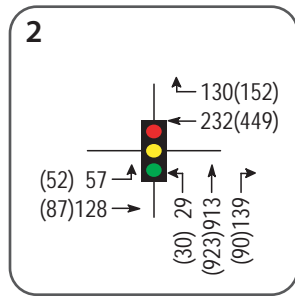
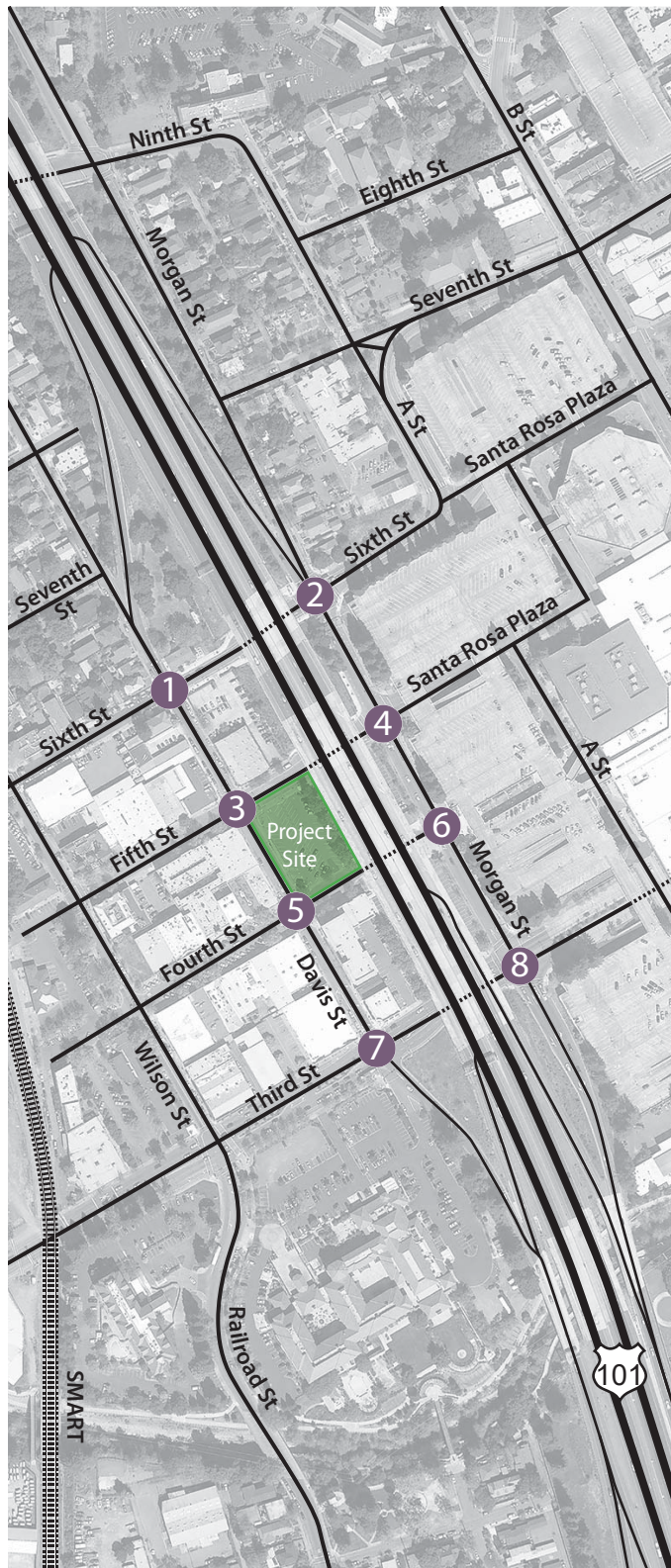
**Table 6 – Trip Generation Summary**

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Hotel	142 rooms	8.17	1,160	0.53	75	44	31	0.60	85	43	42



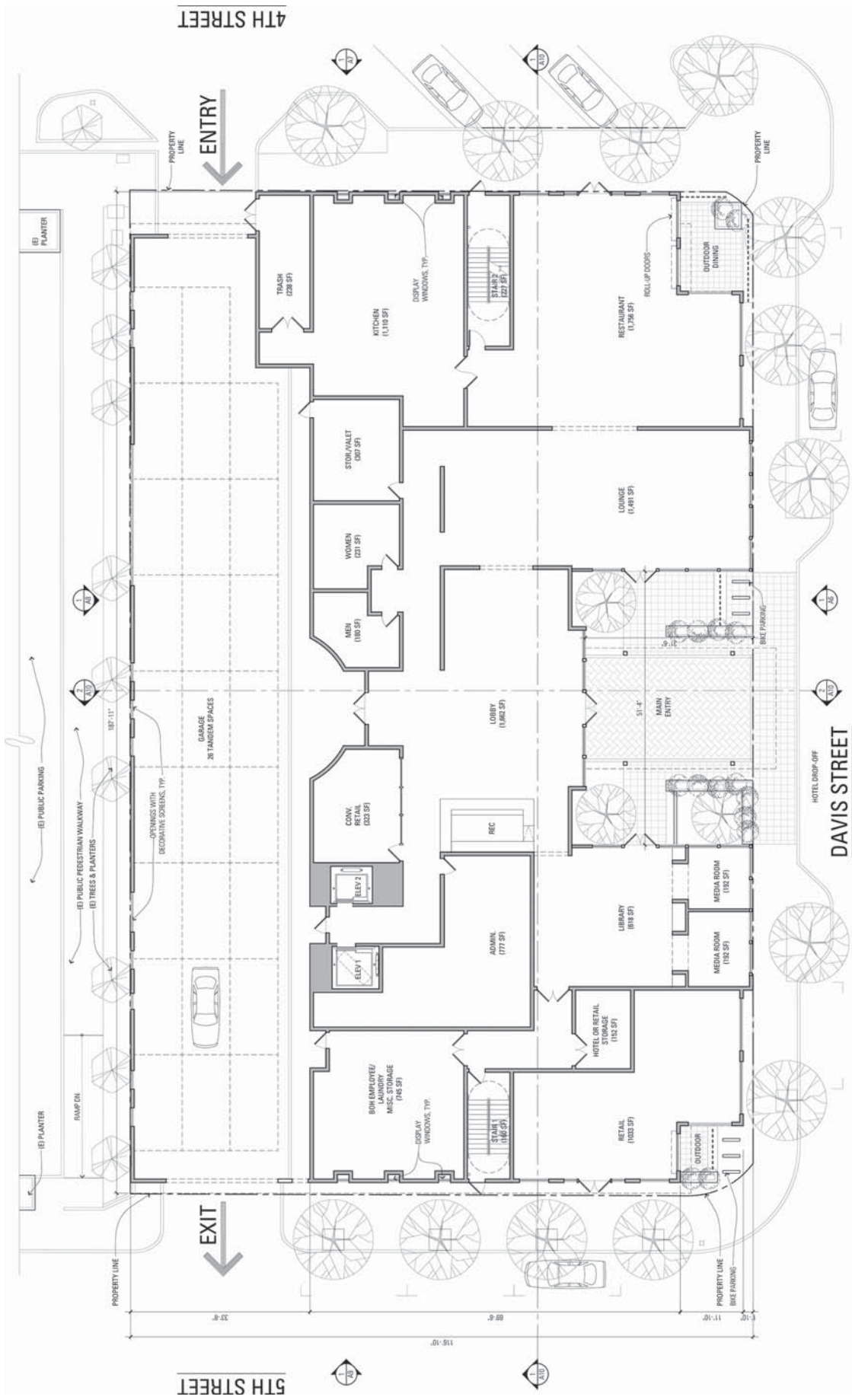


**LEGEND**  
 ● Study Intersection  
 xx AM Peak Hour Volume  
 (xx) PM Peak Hour Volume



**Traffic and Parking Study for the AC Hotel Project**  
**Figure 3 – Future Traffic Volumes**





Source: BAR Architects 10/16

Traffic and Parking Study for the AC Hotel Project  
**Figure 4 – Site Plan**



## Trip Distribution

Due to the regional nature of hotels, it was assumed that the majority of new project trips would be oriented to US 101. While a greater population lives to the south of Santa Rosa, most of the wine-country destinations and the Sonoma County Airport are all located to the north. As a result, it was assumed that trips would be split fairly evenly between these two directions. Employee and visitor trips within City limits were assumed to use Third Street to the east and west of the project and Sixth Street, northeast of the project. The applied distribution assumptions and resulting trips are shown in Table 7.

Route	Percent	Daily Trips	AM Trips	PM Trips
US 101 south of Santa Rosa	40%	464	30	34
US 101 north of Santa Rosa	35%	406	26	29
Third St west of Davis St	10%	116	8	9
Third St east of Morgan St	10%	116	8	9
Sixth Street east of Morgan St	5%	58	3	4
<b>TOTAL</b>	<b>100%</b>	<b>1,160</b>	<b>75</b>	<b>85</b>

## Intersection Operation

### Existing plus Project Conditions

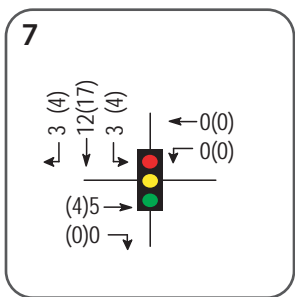
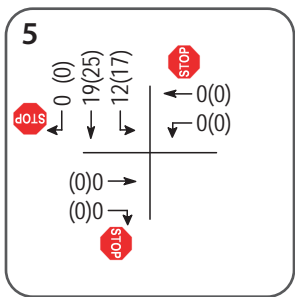
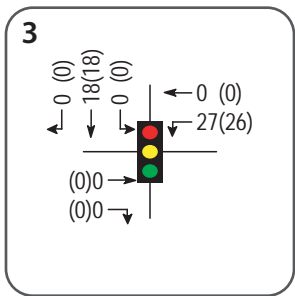
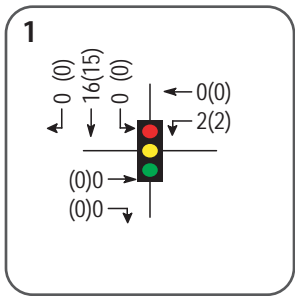
Upon the addition of project-related traffic to the Existing volumes, the study intersections are expected to continue to operate acceptably at LOS C or better. These results are summarized in Table 8. Project traffic volumes are shown in Figure 5.

Study Intersection	Existing Conditions				Existing plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Sixth St/Davis St-US 101 S Off-Ramp	11.8	B	11.9	B	12.0	B	12.1	B
2. Sixth St/Morgan St-US 101 N On-Ramp	10.3	B	12.3	B	10.3	B	12.0	B
3. Fifth St/Davis St	4.6	A	6.4	A	5.9	A	8.3	A
4. Fifth St/Morgan St	4.1	A	7.7	A	4.2	A	7.5	A
5. Fourth St/Davis St	8.8	A	9.5	A	9.1	A	10.0	A
6. Fourth St/Morgan St	2.3	A	3.9	A	2.7	A	4.6	A
7. Third St/Davis St-US 101 S On-ramp	12.0	B	22.7	C	12.1	B	22.8	C
8. Third St/Morgan St-US 101 N Off-ramp	13.1	B	23.1	C	13.3	B	23.1	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

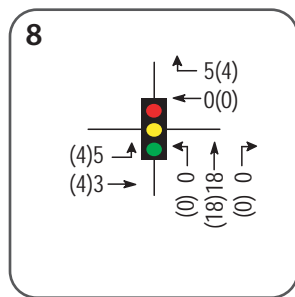
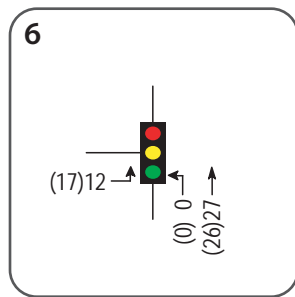
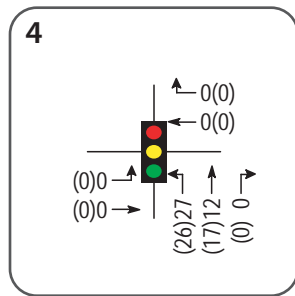
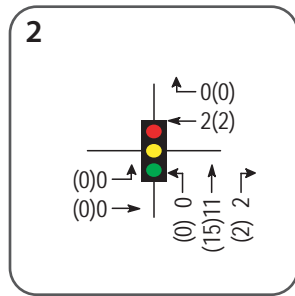
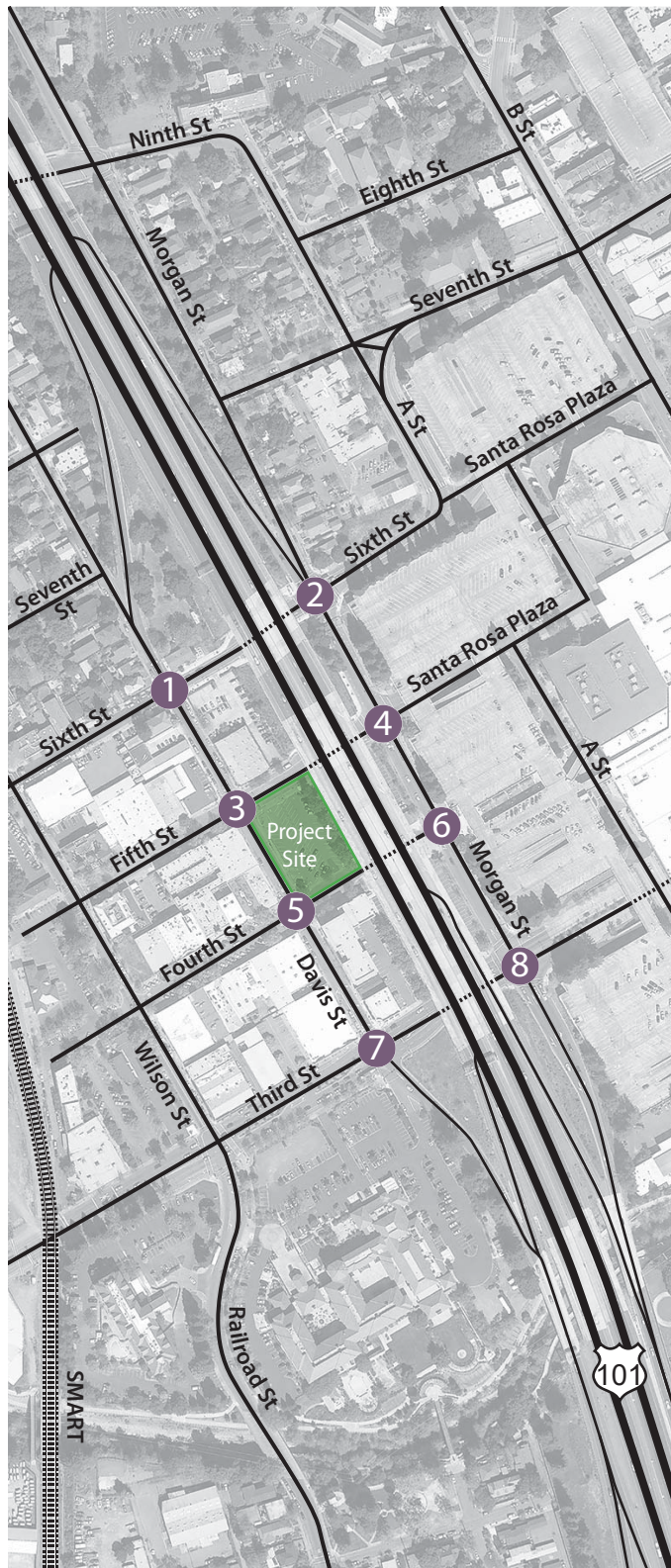
It should be noted that with the addition of project-related traffic volumes, average delay at Sixth Street/Morgan Street-US 101 North On-Ramp and Fifth Street/Morgan Street decreases during the a.m. peak hour. While this is counter-intuitive, this condition occurs when a project adds trips to movements that are currently underutilized or have delays that are below the intersection average, resulting in a better balance between approaches and





**LEGEND**

- Study Intersection
- xx AM Peak Hour Volume
- (xx) PM Peak Hour Volume



**Traffic and Parking Study for the AC Hotel Project**  
**Figure 5 – Project Traffic Volumes**





lower overall average delay. The project adds traffic predominantly to the through movement, which has an average delay that is lower than the average for the intersection as a whole, resulting in a slight reduction in the overall average delay. The conclusion could incorrectly be drawn that the project actually improves operation based on this data alone; however, it is more appropriate to conclude that the project trips are expected to make use of excess capacity, so drivers will experience little, if any, change in conditions as a result of the project.

## Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated Future volumes, the study intersections are expected to operate at the same levels of service as without. The Future plus Project operating conditions are summarized in Table 9.

**Table 9 – Future and Future plus Project Peak Hour Levels of Service**

Study Intersection	Future Conditions				Future plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Sixth St/Davis St-US 101 S Off-Ramp	16.8	B	28.8	C	16.9	B	29.3	C
2. Sixth St/Morgan St-US 101 N On-Ramp	12.7	B	17.5	B	11.9	B	17.6	B
3. Fifth St/Davis St	11.0	B	7.7	A	11.4	B	8.4	A
4. Fifth St/Morgan St	5.3	A	10.6	B	5.3	A	10.4	B
5. Fourth St/Davis St	18.4	C	23.6	C	19.8	C	26.6	D
6. Fourth St/Morgan St	4.0	A	4.1	A	4.9	A	5.0	A
7. Third St/Davis St-US 101 S On-ramp	34.1	C	31.1	C	34.8	C	31.4	C
8. Third St/Morgan St-US 101 N Off-ramp	16.4	B	23.3	C	16.7	B	23.5	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

It should be noted that with the addition of project-related traffic volumes, average delay at the intersection of Sixth Street/Morgan Street-US 101 North On-Ramp decreases during the a.m. peak hour. As discussed above, this result should not be taken as indicating improved conditions as a result of the project, but rather a use of available capacity.

**Finding** – The study intersections will continue operating at the same Levels of Service with project traffic added as without it.

# Alternative Modes

## Pedestrian Facilities

Given the project’s proximity of residential land uses to the north and downtown Santa Rosa to the east, as well as its location within Railroad Square and proximity to the SMART station, it is reasonable to assume that some hotel guests and employees will want to walk, bicycle, and/or use transit for trips to and from the project site.

Sidewalks currently exist along the project frontages. Sidewalks are also provided along both sides of Sixth Street, Fifth Street, and Fourth Street, all of which provide pedestrian connectivity between the project site and surrounding uses in Railroad Square and downtown Santa Rosa.

As indicated in the collision history section above, the intersection of Fourth Street/Davis Street has encountered a collision rate that is nearly triple the statewide average, with the dominant pattern of collisions involving drivers running the Davis Street stop sign in addition to pedestrian right-of-way violations. This intersection is located on the southwest corner of the AC Hotel site; the hotel would be expected to add a modest amount of vehicle traffic to the intersection and a substantial amount of pedestrian traffic. In order to help address the existing collision pattern at the intersection and offset the potential for increased collisions associated with the hotel’s added pedestrian activity, it is recommended that the project include construction of bulb-outs on the intersection’s northwest and southwest corners, similar to those currently existing on the northeast and southeast corners. The bulb-outs would help to reduce pedestrian crossing distances, make pedestrians more visible to drivers, and improve visibility of the stop signs on southbound Davis Street. The design of the bulbouts will need to be reviewed and approved by the City of Santa Rosa.

**Finding** – While pedestrian facilities serving the project site are generally adequate, the project will add pedestrian activity to the intersection of Davis Street/Fourth Street, which has an existing collision rate that is nearly triple the statewide average, including collisions involving pedestrians.

**Recommendation** – The project applicant should be responsible for constructing bulb-outs on the northwest and southwest corners of the Fourth Street/Davis Street intersection, the design of which will need to be reviewed and approved by the City of Santa Rosa.



Potential bulb-outs at Fourth Street/Davis Street

## Bicycle Facilities

Existing and planned bicycle facilities, per the City’s *Bicycle and Pedestrian Master Plan*, would provide adequate access for bicyclists. The proposed project’s site plan includes bicycle parking; it appears that six racks with a capacity of two bikes each are depicted, resulting in a supply of 12 bicycle parking spaces. While the majority of hotel guests are expected to travel by vehicle, with the close proximity to downtown and residential neighborhoods, some guests and employees may wish to travel to and from the hotel by bike. According to the City of Santa Rosa’s municipal code, Chapter 20.36.040, hotel land uses are required to provide one bicycle parking space plus one space per 10 guest rooms. Based on the City’s requirements, the hotel would be required to provide 15 bicycle parking spaces. The hotel may also wish to make bicycles available to hotel guests. This would not only be considered an attractive amenity by some guests but could also help to modestly reduce vehicular

parking demand, as guests who enjoy bicycling could travel to and from the site by SMART and use bicycles to travel throughout the downtown area.

**Finding** – Bicycle facilities serving the project site are generally adequate. The proposed site plan shows a total of 12 bicycle parking spaces provided.

**Recommendation** – To meet the City requirements, 15 bicycle parking spaces should be provided on-site.

**Recommendation** – The applicants may wish to consider providing bicycles for guests to use while staying at the hotel.

## Transit

Several existing bus transit routes are within close walking distance of the project, as is the SMART rail station that will begin operation in 2017. Transit will be a viable mode of travel for hotel guests and employees, and adequate facilities exist to accommodate project-generated transit trips.

**Finding** – Transit facilities serving the project site are adequate.

# Parking

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The project was analyzed to determine whether the proposed parking supply would be sufficient for the anticipated parking demand. The proposed project currently plans to provide 26 tandem spaces on-site together with an off-site parking lot containing approximately 100 spaces. All parking will be accommodated via a valet service operated by the hotel.

## Required Parking

### Downtown Station Area Plan

The *Downtown Station Area Specific Plan*, adopted in 2007, establishes a vision for the downtown Santa Rosa area including Railroad Square. The Plan recognizes the importance of parking management in accommodating future growth in a transit-supportive and pedestrian-oriented downtown environment, and included an extensive parking analysis that resulted in a revised set of parking requirements that have since been incorporated into the City's zoning code. For the Railroad Square sub-area of the Plan, a strong emphasis is placed on shared parking, given the area's diverse land use types that encounter peak parking demand at different times of day.

The Station Area Plan parking analysis estimated both the future parking demand and future parking supply in Railroad Square. The analysis assumed that the existing surface parking lot located on the site of the proposed AC hotel would be eliminated, and the site developed. The analysis also assumed that 100 parking spaces would be provided in the future under the US 101 viaduct (the freeway was under construction and no spaces existed under the viaduct when the parking analysis was completed). According to the *Santa Rosa Parking Analysis* prepared by CDM Smith in 2015, the total number of automobile spaces existing under US 101 is 146 (93 in Lot 13 between Third and Fourth Streets, and 53 in Lot 15 between Fourth and Fifth Streets east of the AC Hotel site). The actual parking supply in this portion of Railroad Square is therefore somewhat higher than was assumed to exist in the Station Area Plan.

Upon buildout of the Railroad Square area, including provision of one reserved parking space per residential unit and one parking space per 500 square feet of nonresidential uses for all future development, the Station Area Specific Plan parking analysis concluded that parking demand could be met by the available supply of spaces (on-street, off-street, and private). With respect to commuter parking demand associated with the SMART station, the analysis highlights the importance of the City implementing priced parking strategies that strongly discourage and limit the ability for long-term commuter parking to occur in the Railroad Square area. The City of Santa Rosa is currently in the process of developing a comprehensive Parking Management Plan that will include strategies for the Railroad Square area.

### Parking Management Plan

In July 2016, the City began work on a comprehensive Parking Management Plan (PMP) to develop progressive parking strategies for downtown Santa Rosa and to develop a Railroad Square Parking Management Plan. The City recently completed its community outreach efforts for the PMP and is working on evaluating recommendations for parking strategies within the downtown area and Railroad Square. Recommendations will be presented to Council at the end of 2016 with implementation of the parking plan potentially starting in 2017.

### Santa Rosa Municipal Code

The City of Santa Rosa's Municipal Code implements the parking requirements for projects that are within the Station Area Plan's Railroad Square area in Chapter 20-36; Parking and Loading Standards. The code requires one space per

500 square feet of new floor area. The proposed hotel is approximately 77,000 square feet which would equate to a parking requirement of 154 parking spaces.

## Shared Parking

In addition to the analysis of the parking requirements specified by City code, a shared-use analysis was performed. In order to determine the potential parking demand of a fully-occupied AC Hotel, parking rates from ITE's *Parking Generation Manual*, Fourth Edition, were applied within a Shared Parking model developed by the Urban Land Institute. The Shared Parking model estimates the parking activity by land use by time of day and day of the week, and then determines the peak parking demand based on the mix of land uses.

A parking demand methodology that considers "shared parking" principles can significantly improve the accuracy of determining actual parking demand. The ULI publication *Shared Parking*, 2<sup>nd</sup> Edition, 2006, includes state-of-the-practice methodologies for determining parking demand based on the various components of a specific project. The ULI shared parking methodology focuses on temporal data, determining when the overall peak demand for various land uses occurs, including what time of day, whether it is a weekday or weekend, and what month of the year. The recommended parking supply is then tied to that maximum demand period. The ULI model considers the proposed mix of land uses, including quantities of each type of use.

The ULI shared parking model separately considers the hourly parking demand created by hotel guests, employees, restaurants/lounges, and meeting rooms. The proposed hotel would include a total of 142 hotel units, 3,300 square feet of restaurant space and 1,033 square feet of retail space. The methodology takes into consideration the interactions among distinct hotel uses, such as hotel guests also being restaurant/lounge patrons and users of the hotel meeting space. Hotel guest parking demand is highest during early mornings and late nights, while other hotel uses have a higher parking demand during the daytime. Additionally, reductions were applied to the hotel uses based on rates published by ULI. These reductions include a mode adjustment, i.e. the percent of hotel guests accessing the site by modes other than by private automobiles (taxi, hotel shuttle, another guest's vehicle, etc.) and an internal capture percentage which is the percent of guests who access the restaurant and convention space and are also staying at the hotel. The default ULI mode adjustment and internal capture rates for a "Full-Service Hotel," which are hotels with restaurant and meeting space, were used. For example, based on ULI rates, 30 percent of hotel restaurant patrons would arrive other than in a private auto and 70 percent of patrons would also be guests staying at the hotel. Table 10 summarizes the mode adjustment and internal capture assumptions.

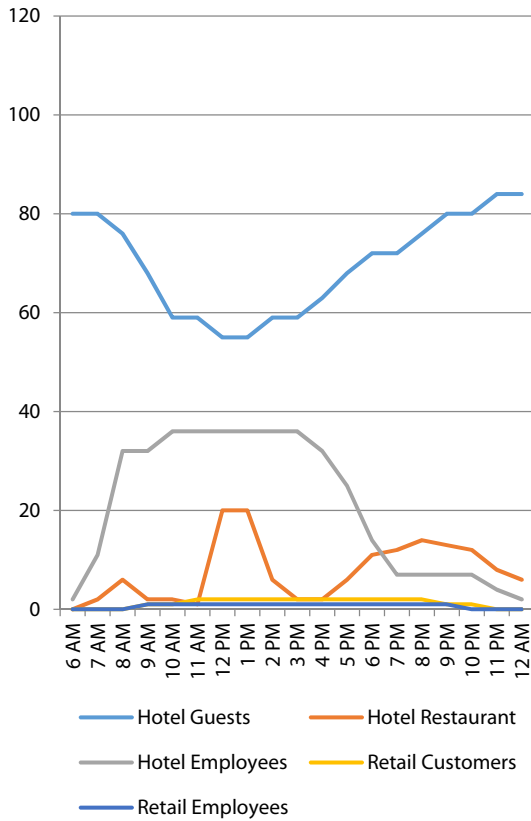
**Table 10 – Mode Adjustment and Internal Capture Assumptions**

Land Use	Weekday		Weekend	
	Mode Adjustment	Internal Capture	Mode Adjustment	Internal Capture
<b>Hotel</b>				
Guest	34%	-	23%	-
Restaurant	30%	10%	40%	70%
Convention Space	25%	75%	25%	75%

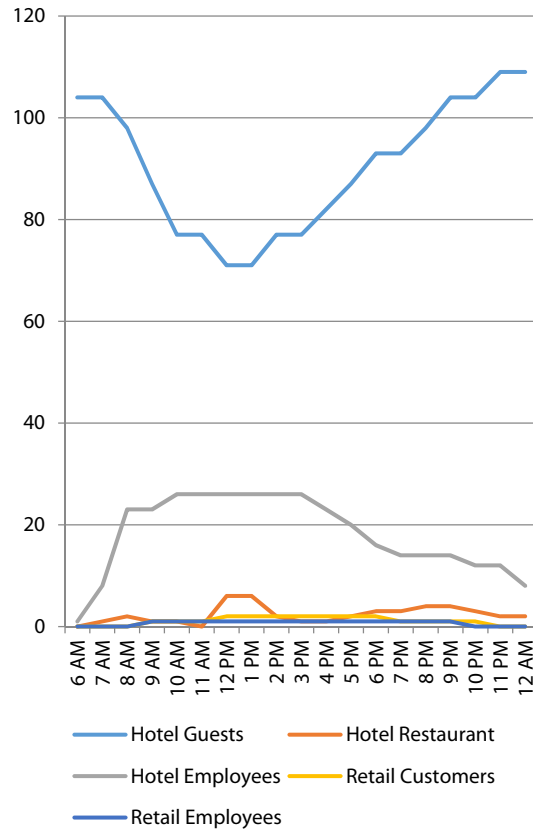
Source: *Shared Parking*, 2<sup>nd</sup> Edition, Urban Land Institute, 2006

In addition to mode adjustment and internal capture rates, the shared parking model applies hourly and peak month factors to determine the time-of-day demand. The peak month for the proposed hotel, based on the Shared Parking Model's calculations, is anticipated to be August. With the mode adjustment, internal capture, time-of-day, and peak month factors applied, the hourly parking demands generated by each component of the hotel and weekdays and weekends were derived. These hourly parking demands are shown in Graph 1 and Graph 2.

**Graph 1 – Weekday Parking Demand by Use**



**Graph 2 – Weekend Parking Demand by Use**

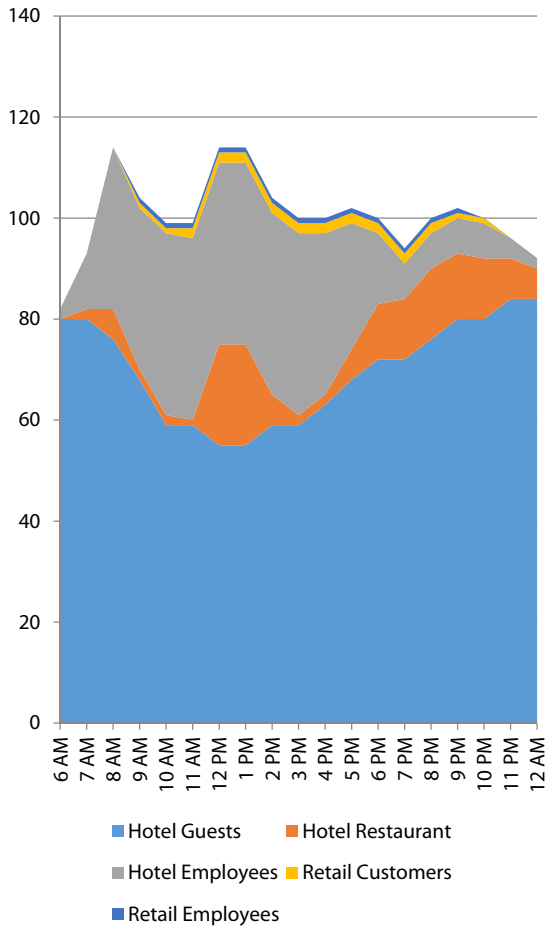


### Cumulative Parking Demand

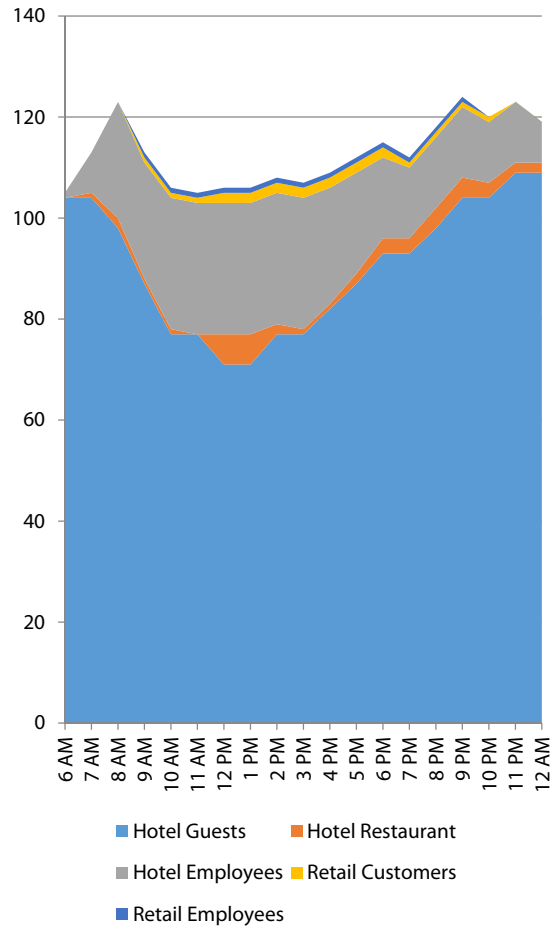
The parking demand profile for the project was assessed by summing the hourly demands of each hotel component. From this cumulative parking demand profile, it is possible to determine the hour or hours of the day when the site as a whole would experience its peak parking demand. The site-wide peak parking demand would occur on weekdays at 12:00 p.m. with a total parking demand of 114 spaces shared among the various hotel uses. On weekends, the cumulative parking demand peaks at 9:00 p.m. with a demand of 124 spaces. The cumulative weekday parking demands for weekdays and weekends are shown in Graph 3 and Graph 4.



**Graph 3 – Weekday Cumulative Parking Demand**



**Graph 4 – Weekend Cumulative Parking Demand**



**Finding** – With shared parking principles applied, the proposed project would be expected to experience a peak demand of 124 parking spaces on weekends at 9:00 p.m. The proposed project currently plans to provide 26 tandem parking on-site and an additional off-site lot to accommodate peak parking demand. With a peak demand of 124 parking spaces, the off-site lot would need to provide approximately 98 parking spaces to adequately accommodate parking demand.

**Recommendation** – The applicant should provide approximately 98 parking spaces in their off-site lot to adequately accommodate peak parking demand.

**Recommendation** – The City should consider allowing a minor reduction in parking requirements to reflect the shared parking characteristics of the proposed hotel.

# Conclusions and Recommendations

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## Conclusions

- The proposed hotel with a restaurant and retail shop would generate an average of 1,160 daily trips with 75 trips during the a.m. peak hour and 85 trips during the p.m. peak hour.
- All eight study intersections are currently operating at LOS C or better and are expected to continue doing so with the addition of project-generated trips.
- Under Future volumes the study intersections are expected to operate acceptably, with and without project-added traffic, at LOS C or better.
- Pedestrian facilities serving the project site are generally adequate.
- The project will add pedestrian activity to the intersection of Davis Street/Fourth Street, which has an existing collision rate that is nearly triple the statewide average, including collisions involving pedestrians.
- Bicycle and transit facilities are adequate to serve the project site. The proposed site plan includes bicycle parking accommodating 12 bicycles.
- City parking requirements indicate that the proposed hotel would need to provide 154 parking spaces.
- Based on a site-specific parking analysis completed in consideration of shared parking principles, the project would be expected to experience a peak demand of 124 parking spaces on weekends at 9:00 p.m.
- The project plans indicate that 26 tandem parking spaces for valet use would be provided on-site and there would be an off-site lot to accommodate additional parking demand. With a peak demand for 124 parking spaces, the off-site lot would need to provide approximately 98 parking spaces to adequately accommodate parking demand.

## Recommendations

- As part of the project, bulb-outs on should be constructed on the northwest and southwest corners of Fourth Street/Davis Street, with the design to be reviewed and approved by the City of Santa Rosa.
- The hotel should provide at least 15 bicycle parking spaces.
- The applicants may wish to consider providing bicycles for guests to use while staying at the hotel.
- The applicant should plan to provide approximately 98 parking spaces in the hotel's off-site parking lot.
- The City should consider allowing a minor parking reduction to reflect the potential for shared parking among the various hotel uses.

# Study Participants and References

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## Study Participants

Principal in Charge	Zack Matley, AICP
Assistant Planner	Shannon Baker
Graphics/Editing/Formatting	Angela McCoy
Report Review	Dalene J. Whitlock, PE, PTOE

## References

- 2012 Collision Data on California State Highways*, California Department of Transportation, 2012
- Design Information Bulletin Number 89: Class IV Bikeway Guidance (Separated Bikeways/Cycle Tracks)*, California Department of Transportation, 2015
- Highway Capacity Manual*, Transportation Research Board, 2010
- Highway Design Manual*, Sixth Edition, California Department of Transportation, 2012
- Santa Rosa Bicycle and Pedestrian Master Plan*, City of Santa Rosa, 2010
- Santa Rosa City Code*, Quality Code Publishing, 2016
- Santa Rosa CityBus, [http://ci.santa-rosa.ca.us/departments/transit/citybus/maps\\_schedules/Pages/default.aspx](http://ci.santa-rosa.ca.us/departments/transit/citybus/maps_schedules/Pages/default.aspx)
- Santa Rosa General Plan 2035*, City of Santa Rosa, 2014
- Statewide Integrated Traffic Records System (SWITRS)*, California Highway Patrol, 2010-2015
- Trip Generation Manual*, 9<sup>th</sup> Edition, Institute of Transportation Engineers, 2012

SRO406





# Appendix A

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## Collision Rate Calculations





### Intersection Collision Rate Calculations

#### AC Hotel

**Intersection # 1:** Sixth Street & Davis Street  
**Date of Count:** Tuesday, November 01, 2016

**Number of Collisions:** 6  
**Number of Injuries:** 3  
**Number of Fatalities:** 0  
**ADT:** 7400  
**Start Date:** May 1, 2011  
**End Date:** April 30, 2016  
**Number of Years:** 5

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

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

$$\text{collision rate} = \frac{6}{7,400} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.44 c/mve</b>	<b>0.0%</b>	<b>50.0%</b>
<b>Statewide Average*</b>	<b>0.27 c/mve</b>	<b>0.4%</b>	<b>41.9%</b>

ADT = average daily total vehicles entering intersection  
c/mve = collisions per million vehicles entering intersection  
\* 2012 Collision Data on California State Highways, Caltrans

**Intersection # 2:** Sixth Street & Morgan Street  
**Date of Count:** Tuesday, November 01, 2016

**Number of Collisions:** 18  
**Number of Injuries:** 10  
**Number of Fatalities:** 0  
**ADT:** 25800  
**Start Date:** May 1, 2011  
**End Date:** April 30, 2016  
**Number of Years:** 5

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

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

$$\text{collision rate} = \frac{18}{25,800} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.38 c/mve</b>	<b>0.0%</b>	<b>55.6%</b>
<b>Statewide Average*</b>	<b>0.27 c/mve</b>	<b>0.4%</b>	<b>41.9%</b>

ADT = average daily total vehicles entering intersection  
c/mve = collisions per million vehicles entering intersection  
\* 2012 Collision Data on California State Highways, Caltrans

**Intersection Collision Rate Calculaions**

**AC Hotel**

**Intersection # 3:** Fifth Street & Davis Street  
**Date of Count:** Tuesday, November 01, 2016

**Number of Collisions:** 0  
**Number of Injuries:** 0  
**Number of Fatalities:** 0  
**ADT:** 13700  
**Start Date:** May 1, 2011  
**End Date:** April 30, 2016  
**Number of Years:** 5

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

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

$$\text{collision rate} = \frac{0}{13,700} \times \frac{1,000,000}{365 \times 5}$$

	<b>Collision Rate</b>	<b>Fatality Rate</b>	<b>Injury Rate</b>
<b>Study Intersection</b>	<b>0.00 c/mve</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Statewide Average*</b>	<b>0.27 c/mve</b>	<b>0.4%</b>	<b>41.9%</b>

ADT = average daily total vehicles entering intersection  
c/mve = collisions per million vehicles entering intersection  
\* 2012 Collision Data on California State Highways, Caltrans

**Intersection # 4:** Fifth Street & Morgan Street  
**Date of Count:** Tuesday, November 01, 2016

**Number of Collisions:** 11  
**Number of Injuries:** 7  
**Number of Fatalities:** 0  
**ADT:** 19100  
**Start Date:** May 1, 2011  
**End Date:** April 30, 2016  
**Number of Years:** 5

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

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

$$\text{collision rate} = \frac{11}{19,100} \times \frac{1,000,000}{365 \times 5}$$

	<b>Collision Rate</b>	<b>Fatality Rate</b>	<b>Injury Rate</b>
<b>Study Intersection</b>	<b>0.32 c/mve</b>	<b>0.0%</b>	<b>63.6%</b>
<b>Statewide Average*</b>	<b>0.27 c/mve</b>	<b>0.4%</b>	<b>41.9%</b>

ADT = average daily total vehicles entering intersection  
c/mve = collisions per million vehicles entering intersection  
\* 2012 Collision Data on California State Highways, Caltrans

**Intersection Collision Rate Calculaions**

**AC Hotel**

**Intersection # 5:** Fourth Street & Davis Street  
**Date of Count:** Tuesday, November 01, 2016

**Number of Collisions:** 7  
**Number of Injuries:** 4  
**Number of Fatalities:** 0  
**ADT:** 6200  
**Start Date:** May 1, 2011  
**End Date:** April 30, 2016  
**Number of Years:** 5

**Intersection Type:** Four-Legged  
**Control Type:** 4 Way Stop  
**Area:** Urban

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

$$\text{collision rate} = \frac{7}{6,200} \times \frac{1,000,000}{365 \times 5}$$

	<b>Collision Rate</b>	<b>Fatality Rate</b>	<b>Injury Rate</b>
<b>Study Intersection</b>	<b>0.62 c/mve</b>	<b>0.0%</b>	<b>57.1%</b>
<b>Statewide Average*</b>	<b>0.21 c/mve</b>	<b>0.4%</b>	<b>35.6%</b>

ADT = average daily total vehicles entering intersection  
c/mve = collisions per million vehicles entering intersection  
\* 2012 Collision Data on California State Highways, Caltrans

**Intersection # 6:** Fourth Street & Morgan Street  
**Date of Count:** Tuesday, November 01, 2016

**Number of Collisions:** 1  
**Number of Injuries:** 0  
**Number of Fatalities:** 0  
**ADT:** 14200  
**Start Date:** May 1, 2011  
**End Date:** April 30, 2016  
**Number of Years:** 5

**Intersection Type:** Tee  
**Control Type:** Signals  
**Area:** Urban

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

$$\text{collision rate} = \frac{1}{14,200} \times \frac{1,000,000}{365 \times 5}$$

	<b>Collision Rate</b>	<b>Fatality Rate</b>	<b>Injury Rate</b>
<b>Study Intersection</b>	<b>0.04 c/mve</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Statewide Average*</b>	<b>0.21 c/mve</b>	<b>0.3%</b>	<b>42.4%</b>

ADT = average daily total vehicles entering intersection  
c/mve = collisions per million vehicles entering intersection  
\* 2012 Collision Data on California State Highways, Caltrans

**Intersection Collision Rate Calculaions**

**AC Hotel**

**Intersection # 7:** Third Street & Davis Street-US 101 South On-Ramp

**Date of Count:** Tuesday, November 01, 2016

**Number of Collisions:** 11  
**Number of Injuries:** 5  
**Number of Fatalities:** 0  
**ADT:** 44700  
**Start Date:** May 1, 2011  
**End Date:** April 30, 2016  
**Number of Years:** 5

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

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

$$\text{collision rate} = \frac{11}{44,700} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.13 c/mve</b>	<b>0.0%</b>	<b>45.5%</b>
<b>Statewide Average*</b>	<b>0.27 c/mve</b>	<b>0.4%</b>	<b>41.9%</b>

ADT = average daily total vehicles entering intersection  
c/mve = collisions per million vehicles entering intersection  
\* 2012 Collision Data on California State Highways, Caltrans

**Intersection # 8:** Third Street & Morgan Street-US 101 Off-Ramp

**Date of Count:** Tuesday, November 01, 2016

**Number of Collisions:** 21  
**Number of Injuries:** 12  
**Number of Fatalities:** 0  
**ADT:** 52700  
**Start Date:** May 1, 2011  
**End Date:** April 30, 2016  
**Number of Years:** 5

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

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

$$\text{collision rate} = \frac{21}{52,700} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.22 c/mve</b>	<b>0.0%</b>	<b>57.1%</b>
<b>Statewide Average*</b>	<b>0.27 c/mve</b>	<b>0.4%</b>	<b>41.9%</b>

ADT = average daily total vehicles entering intersection  
c/mve = collisions per million vehicles entering intersection  
\* 2012 Collision Data on California State Highways, Caltrans

# Appendix B

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## Intersection Level of Service Calculations



### HCM Signalized Intersection Capacity Analysis

1: Davis St/US 101 SB Off & 6th St

11/07/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		↔		↔	↔			↔		↔	↔	↔		
Traffic Volume (vph)	0	62	10	48	44	0	0	0	0	108	393	37		
Future Volume (vph)	0	62	10	48	44	0	0	0	0	108	393	37		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	3.5													
Lane Util. Factor	1.00													
Frb. ped/bikes	0.99													
Fllb. ped/bikes	0.99													
Frt	1.00													
Flt Protected	1.00													
Satd. Flow (prot)	1589													
Flt Permitted	1.00													
Satd. Flow (perm)	1589													
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81		
Adj. Flow (vph)	0	77	12	59	54	0	0	0	0	133	485	46		
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	9	0		
Lane Group Flow (vph)	0	82	0	0	113	0	0	0	0	0	655	0		
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20		
Confl. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20		
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5		
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Protected Phases	2	6	6	6	6	6	6	6	6	6	6	6		
Permitted Phases	4													
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3		
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3		
Actuated G/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44		
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0		
Lane Grp Cap. (vph)	701	701	701	701	701	701	701	701	701	701	701	1497		
v/s Ratio Prot	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.19		
v/s Ratio Perm	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.44		
v/g Ratio	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	11.7		
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Progression Factor	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.9		
Incremental Delay, d2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	12.6		
Delay (s)	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	12.6		
Level of Service	B													
Approach Delay (s)	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	12.6		
Approach LOS	B													
<b>Intersection Summary</b>														
HCM 2000 Control Delay	11.8											HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.31													
Actuated Cycle Length (s)	60.0												Sum of lost time (s)	7.2
Intersection Capacity Utilization	33.6%												ICU Level of Service	A
Analysis Period (min)	15													
c. Critical Lane Group														


AC Hotel Traffic Impact Study  
AM Existing

W-Trans

### HCM Signalized Intersection Capacity Analysis

1: Davis St/US 101 SB Off & 6th St

11/07/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		↔		↔	↔			↔		↔	↔	↔		
Traffic Volume (vph)	0	60	22	111	74	0	0	0	0	62	367	48		
Future Volume (vph)	0	60	22	111	74	0	0	0	0	62	367	48		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	3.5													
Lane Util. Factor	1.00													
Frb. ped/bikes	0.98													
Fllb. ped/bikes	1.00													
Frt	1.00													
Flt Protected	1.00													
Satd. Flow (prot)	1542													
Flt Permitted	1.00													
Satd. Flow (perm)	1542													
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
Adj. Flow (vph)	0	63	23	117	78	0	0	0	0	65	386	51		
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	15	0		
Lane Group Flow (vph)	0	73	0	0	195	0	0	0	0	0	487	0		
Confl. Peds. (#/hr)	30	30	30	30	30	30	30	30	30	30	30	30		
Confl. Bikes (#/hr)	30	30	30	30	30	30	30	30	30	30	30	30		
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5		
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Protected Phases	2	6	6	6	6	6	6	6	6	6	6	6		
Permitted Phases	4													
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3		
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3		
Actuated G/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44		
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0		
Lane Grp Cap. (vph)	681	681	681	681	681	681	681	681	681	681	681	1487		
v/s Ratio Prot	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.14		
v/s Ratio Perm	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.33		
v/g Ratio	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	11.1		
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Progression Factor	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6		
Incremental Delay, d2	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	11.6		
Delay (s)	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	11.6		
Level of Service	B													
Approach Delay (s)	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	11.6		
Approach LOS	B													
<b>Intersection Summary</b>														
HCM 2000 Control Delay	11.9											HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.34													
Actuated Cycle Length (s)	60.0												Sum of lost time (s)	7.2
Intersection Capacity Utilization	37.1%												ICU Level of Service	A
Analysis Period (min)	15													
c. Critical Lane Group														

AC Hotel Traffic Impact Study  
PM Existing

W-Trans

HCM Signalized Intersection Capacity Analysis  
 2. Morgan St/US 101 NB On & 6th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	51	114	0	0	71	63	26	601	58	0	0	0
Traffic Volume (vph)	51	114	0	0	71	63	26	601	58	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00	1.00	1.00
Frb. ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00
Flt	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1739	1863	1863	1863	1492	3470						
Satd. Flow (prot)	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Permitted	1294	1863			1863	1492		3470				
Satd. Flow (perm)	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Peak-hour factor, PHF	55	124	0	0	77	68	28	653	63	0	0	0
Adj. Flow (vph)	0	0	0	0	0	0	0	0	8	0	0	0
RTOR Reduction (vph)	55	124	0	0	77	68	0	736	0	0	0	0
Lane Group Flow (vph)	20	20	20	20	20	20	20	20	20	20	20	20
Conf. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Conf. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Parking (#/hr)												
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2	2	2	2	2	2	2	2	2	2	2	2
Permitted Phases	2	2	2	2	2	2	2	2	2	2	2	2
Actuated Green, G (s)	9.6	9.6	9.6	9.6	9.6	9.6	9.6	39.2	39.2	39.2	39.2	39.2
Effective Green, g (s)	9.6	9.6	9.6	9.6	9.6	9.6	9.6	39.2	39.2	39.2	39.2	39.2
Actuated G/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.65	0.65	0.65	0.65	0.65
Clearance Time (s)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap. (vph)	207	298	298	298	238	2267						
v/s Ratio Prot	c0.07	0.04	0.04	0.04	0.05	0.21						
v/s Ratio Perm	0.27	0.42	0.26	0.29	0.32	0.32						
v/c Ratio	22.1	22.7	22.1	22.2	22.2	4.6						
Uniform Delay, d1	0.92	1.01	1.00	1.00	0.99	0.99						
Progression Factor	0.7	0.9	0.5	0.7	0.4	0.4						
Incremental Delay, d2	21.0	23.8	22.5	22.8	4.9	4.9						
Delay (s)	C	C	C	C	C	A						
Level of Service	C	C	C	C	C	A						
Approach Delay (s)	23.0	22.7	22.7	22.7	4.9	4.9						
Approach LOS	C	C	C	C	A	A						
Intersection Summary												
HCM 2000 Control Delay	10.3 HCM 2000 Level of Service											
HCM 2000 Volume to Capacity ratio	0.34											
Actuated Cycle Length (s)	60.0 Sum of lost time (s)											
Intersection Capacity Utilization	48.2% ICU Level of Service											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
 AM Existing

W-Trans

HCM Signalized Intersection Capacity Analysis  
 2. Morgan St/US 101 NB On & 6th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	46	77	0	0	169	170	27	692	80	0	0	0
Traffic Volume (vph)	46	77	0	0	169	170	27	692	80	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00	1.00	1.00
Frb. ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00
Flt	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1731	1863	1863	1863	1490	3454						
Satd. Flow (prot)	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Permitted	1171	1863			1863	1490		3454				
Satd. Flow (perm)	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Peak-hour factor, PHF	49	83	0	0	182	183	29	744	86	0	0	0
Adj. Flow (vph)	0	0	0	0	0	0	0	0	11	0	0	0
RTOR Reduction (vph)	49	83	0	0	182	183	0	848	0	0	0	0
Lane Group Flow (vph)	30	30	30	30	30	30	30	30	30	30	30	30
Conf. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Conf. Bikes (#/hr)												
Parking (#/hr)												
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2	2	2	2	2	2	2	2	2	2	2	2
Permitted Phases	2	2	2	2	2	2	2	2	2	2	2	2
Actuated Green, G (s)	13.2	13.2	13.2	13.2	13.2	13.2	13.2	35.6	35.6	35.6	35.6	35.6
Effective Green, g (s)	13.2	13.2	13.2	13.2	13.2	13.2	13.2	35.6	35.6	35.6	35.6	35.6
Actuated G/C Ratio	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.59	0.59	0.59	0.59	0.59
Clearance Time (s)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap. (vph)	257	409	409	409	327	2049						
v/s Ratio Prot	0.04	0.04	0.04	0.04	0.10	0.10						
v/s Ratio Perm	0.19	0.20	0.44	0.44	0.56	0.41						
v/c Ratio	19.1	19.1	20.2	20.8	6.6	6.6						
Uniform Delay, d1	0.72	1.11	1.00	1.00	1.00	1.00						
Progression Factor	0.4	0.2	0.8	2.1	0.6	0.6						
Incremental Delay, d2	14.1	21.5	21.0	22.9	7.2	7.2						
Delay (s)	B	C	C	C	C	A						
Level of Service	B	C	C	C	C	A						
Approach Delay (s)	18.8	22.0	22.0	22.0	7.2	7.2						
Approach LOS	B	C	C	C	A	A						
Intersection Summary												
HCM 2000 Control Delay	12.3 HCM 2000 Level of Service											
HCM 2000 Volume to Capacity ratio	0.45											
Actuated Cycle Length (s)	60.0 Sum of lost time (s)											
Intersection Capacity Utilization	55.8% ICU Level of Service											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
 PM Existing

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HCM Signalized Intersection Capacity Analysis  
3: Davis St & 5th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	22	18	2	35	0	0	0	0	21	415	20
Future Volume (vph)	0	22	18	2	35	0	0	0	0	21	415	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0											
Lane Util. Factor	1.00											
Frb. ped/bikes	1.00											
Flpb. ped/bikes	1.00											
Frt	0.94											
Flt Protected	1.00											
Satd. Flow (prot)	1711											
Flt Permitted	1.00											
Satd. Flow (perm)	1711											
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	0	28	23	3	44	0	0	0	0	27	525	25
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	30	0	0	47	0	0	0	0	0	575	0
Confl. Peds. (#/hr)	15	15	15	15	15	15	15	15	15	15	15	15
Confl. Bikes (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10
Parking (#/hr)	5											
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Protected Phases	2											
Permitted Phases	6											
Actuated Green, G (s)	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Effective Green, g (s)	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Actuated g/C Ratio	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap. (vph)	173	173	173	162	162	162	162	162	162	162	162	162
v/s Ratio Prot	0.02											
v/s Ratio Perm	c0.03											
v/g Ratio	0.18	0.29	0.29	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Uniform Delay, d1	24.6	24.9	24.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Progression Factor	1.00	1.08	1.08	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Incremental Delay, d2	0.2	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Delay (s)	24.8	27.2	27.2	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Level of Service	C											
Approach Delay (s)	24.8	27.2	27.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
Approach LOS	C											
Intersection Summary												
HCM 2000 Control Delay	4.6											
HCM 2000 Volume to Capacity ratio	0.23											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	32.7%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
AM Existing

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HCM Signalized Intersection Capacity Analysis  
3: Davis St & 5th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	30	31	52	73	0	0	0	0	48	445	16
Future Volume (vph)	0	30	31	52	73	0	0	0	0	48	445	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0											
Lane Util. Factor	1.00											
Frb. ped/bikes	1.00											
Flpb. ped/bikes	1.00											
Frt	0.93											
Flt Protected	1.00											
Satd. Flow (prot)	1694											
Flt Permitted	1.00											
Satd. Flow (perm)	1694											
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	32	33	55	77	0	0	0	0	51	468	17
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	37	0	0	132	0	0	0	0	0	534	0
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Confl. Bikes (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10
Parking (#/hr)	5											
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Protected Phases	2											
Permitted Phases	6											
Actuated Green, G (s)	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
Effective Green, g (s)	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap. (vph)	265	265	265	216	216	216	216	216	216	216	216	216
v/s Ratio Prot	0.02											
v/s Ratio Perm	c0.10											
v/g Ratio	0.14	0.61	0.61	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Uniform Delay, d1	21.8	23.6	23.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Progression Factor	1.00	0.61	0.61	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Incremental Delay, d2	0.1	3.5	3.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Delay (s)	21.9	18.0	18.0	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Level of Service	C											
Approach Delay (s)	21.9	18.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7
Approach LOS	C											
Intersection Summary												
HCM 2000 Control Delay	6.4											
HCM 2000 Volume to Capacity ratio	0.29											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	38.8%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
PM Existing

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HCM Signalized Intersection Capacity Analysis  
4: Morgan St & 5th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	19	16	0	0	7	32	27	632	3	0	0	0
Traffic Volume (vph)	19	16	0	0	7	32	27	632	3	0	0	0
Future Volume (vph)	19	16	0	0	7	32	27	632	3	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6	3.6			3.6	3.6		3.6				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00				
Frbp. ped/bikes	1.00	1.00			1.00	0.95	1.00	1.00				
Fllpb. ped/bikes	0.99	1.00			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	1.00				
Flt Protected	0.95	1.00			1.00	1.00	1.00	1.00				
Satd. Flow (prot)	1743	1863			1863	1508	3527	3527				
Flt Permitted	0.75	1.00			1.00	1.00	1.00	1.00				
Satd. Flow (perm)	1381	1863			1863	1508	3527	3527				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	17	0	0	8	35	29	687	3	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	0	0	0	0
Lane Group Flow (vph)	21	17	0	0	8	4	0	719	0	0	0	0
Confl. Peds. (#/hr)	15				15	15	15	15	15			
Confl. Bikes (#/hr)					10	10	10	10	10			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases	2				6			8				
Permitted Phases	2				6		8					
Actuated Green, G (s)	6.3	6.3			6.3	6.3	46.5	46.5				
Effective Green, g (s)	6.3	6.3			6.3	6.3	46.5	46.5				
Actuated G/C Ratio	0.10	0.10			0.10	0.10	0.78	0.78				
Clearance Time (s)	3.6	3.6			3.6	3.6	3.6	3.6				
Vehicle Extension (s)	3.0	3.0			2.0	2.0	3.0	3.0				
Lane Grp Cap (vph)	145	195			195	158	2733	2733				
v/s Ratio Prot	0.01				0.00		0.20	0.20				
v/s Ratio Perm	0.14	0.09			0.04	0.02	0.26	0.26				
Uniform Delay, d1	24.4	24.3			24.1	24.1	1.9	1.9				
Progression Factor	0.99	0.97			1.00	1.00	0.86	0.86				
Incremental Delay, d2	0.5	0.2			0.0	0.0	0.2	0.2				
Delay (s)	24.5	23.8			24.2	24.1	1.9	1.9				
Level of Service	C	C			C	C	A	A				
Approach Delay (s)	24.2				24.1		1.9	1.9				0.0
Approach LOS	C				C		A	A				A
<b>Intersection Summary</b>												
HCM 2000 Control Delay	4.1 HCM 2000 Level of Service											
HCM 2000 Volume to Capacity ratio	0.25											
Actuated Cycle Length (s)	60.0 Sum of lost time (s)											
Intersection Capacity Utilization	44.3% ICU Level of Service											
Analysis Period (min)	15											
c Critical Lane Group												

AC Hotel Traffic Impact Study  
AM Existing

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HCM Signalized Intersection Capacity Analysis  
4: Morgan St & 5th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	34	64	0	0	68	125	44	656	47	0	0	0
Traffic Volume (vph)	34	64	0	0	68	125	44	656	47	0	0	0
Future Volume (vph)	34	64	0	0	68	125	44	656	47	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6	3.6			3.6	3.6		3.6				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00				
Frbp. ped/bikes	1.00	1.00			1.00	0.94	1.00	1.00				
Fllpb. ped/bikes	0.98	1.00			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.99				
Flt Protected	0.95	1.00			1.00	1.00	1.00	1.00				
Satd. Flow (prot)	1738	1863			1863	1496	3480	3480				
Flt Permitted	0.71	1.00			1.00	1.00	1.00	1.00				
Satd. Flow (perm)	1297	1863			1863	1496	3480	3480				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	70	0	0	74	136	48	713	51	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	117	0	5	0	0	0	0
Lane Group Flow (vph)	37	70	0	0	74	19	0	807	0	0	0	0
Confl. Peds. (#/hr)	20				20	20	20	20	20			
Confl. Bikes (#/hr)					15	15	15	15				
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases	2				6			8				
Permitted Phases	2				6		8					
Actuated Green, G (s)	8.2	8.2			8.2	8.2	44.6	44.6				
Effective Green, g (s)	8.2	8.2			8.2	8.2	44.6	44.6				
Actuated G/C Ratio	0.14	0.14			0.14	0.14	0.74	0.74				
Clearance Time (s)	3.6	3.6			3.6	3.6	3.6	3.6				
Vehicle Extension (s)	3.0	3.0			2.0	2.0	3.0	3.0				
Lane Grp Cap (vph)	177	254			254	204	2586	2586				
v/s Ratio Prot	0.03				0.04		0.23	0.23				
v/s Ratio Perm	0.21	0.28			0.29	0.09	0.31	0.31				
Uniform Delay, d1	23.0	23.2			23.3	22.6	2.6	2.6				
Progression Factor	0.89	0.89			1.00	1.00	0.65	0.65				
Incremental Delay, d2	0.6	0.6			0.2	0.1	0.3	0.3				
Delay (s)	21.2	21.2			23.5	22.7	2.0	2.0				
Level of Service	C	C			C	C	A	A				
Approach Delay (s)	21.2				23.0		2.0	2.0				0.0
Approach LOS	C				C		A	A				A
<b>Intersection Summary</b>												
HCM 2000 Control Delay	7.7 HCM 2000 Level of Service											
HCM 2000 Volume to Capacity ratio	0.31											
Actuated Cycle Length (s)	60.0 Sum of lost time (s)											
Intersection Capacity Utilization	48.1% ICU Level of Service											
Analysis Period (min)	15											
c Critical Lane Group												

AC Hotel Traffic Impact Study  
PM Existing

W-Trans

HCM Unsignalized Intersection Capacity Analysis

5: Davis St & 4th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Traffic Volume (vph)	0	22	22	1	20	0	0	0	0	0	20	422
Future Volume (vph)	0	22	22	1	20	0	0	0	0	0	20	422
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	25	25	1	22	0	0	0	0	0	22	474
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total (vph)	50	23	259	246								
Volume Left (vph)	0	1	22	0								
Volume Right (vph)	25	0	0	9								
Head (s)	-0.27	0.04	0.08	0.01								
Departure Headway (s)	4.7	5.1	4.8	4.7								
Degree Utilization, x	0.07	0.03	0.34	0.32								
Capacity (veh/h)	708	658	744	754								
Control Delay (s)	8.1	8.2	9.0	8.7								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay	8.8											
Level of Service	A											
Intersection Capacity Utilization	26.8%		ICU Level of Service		A							
Analysis Period (min)	15											

AC Hotel Traffic Impact Study  
AM Existing

W-Trans

HCM Unsignalized Intersection Capacity Analysis

5: Davis St & 4th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Traffic Volume (vph)	0	32	51	47	32	0	0	0	0	0	12	481
Future Volume (vph)	0	32	51	47	32	0	0	0	0	0	12	481
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	34	55	51	34	0	0	0	0	0	13	517
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total (vph)	89	85	272	286								
Volume Left (vph)	0	51	13	0								
Volume Right (vph)	55	0	0	27								
Head (s)	-0.34	0.15	0.06	-0.03								
Departure Headway (s)	4.9	5.4	5.0	4.9								
Degree Utilization, x	0.12	0.13	0.38	0.39								
Capacity (veh/h)	685	625	702	714								
Control Delay (s)	8.6	9.1	9.9	9.9								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay	9.6											
Level of Service	A											
Intersection Capacity Utilization	32.2%		ICU Level of Service		A							
Analysis Period (min)	15											

AC Hotel Traffic Impact Study  
PM Existing

W-Trans

HCM Signalized Intersection Capacity Analysis  
6. Morgan St & 4th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	0	0	0	0	39	657	0	0	0	0
Future Volume (vph)	8	0	0	0	0	0	39	657	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6											
Lane Util. Factor	1.00											
Fpb. ped/bikes	1.00											
Flpb. ped/bikes	0.97											
Frt	1.00											
Flt Protected	0.95											
Satd. Flow (prot)	1721											
Flt Permitted	1.00											
Satd. Flow (perm)	1811											
Peak-hour factor, PHF	0.90	0.92	0.90	0.92	0.92	0.92	0.90	0.90	0.92	0.92	0.90	0.90
Adj. Flow (vph)	9	0	0	0	0	0	43	730	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	0	0	0	773	0	0	0	0
Confl. Peds. (#/hr)	20											
Confl. Bikes (#/hr)	10											
Parking (#/hr)	5											
Turn Type	Perm	NA					Perm	NA				
Protected Phases	2											
Permitted Phases	2											
Actuated Green, G (s)	3.9											
Effective Green, g (s)	3.9											
Actuated g/C Ratio	0.06											
Clearance Time (s)	3.6											
Vehicle Extension (s)	3.0											
Lane Grp Cap. (vph)	117											
v/s Ratio Prot	c0.00											
v/s Ratio Perm	0.08											
v/g Ratio	0.27											
Uniform Delay, d1	26.4											
Progression Factor	1.00											
Incremental Delay, d2	0.3											
Delay (s)	26.6											
Level of Service	C											
Approach Delay (s)	26.6											
Approach LOS	C											
<b>Intersection Summary</b>												
HCM 2000 Control Delay	2.3											
HCM 2000 Volume to Capacity ratio	0.25											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	30.1%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
AM Existing

W-Trans

HCM Signalized Intersection Capacity Analysis  
6. Morgan St & 4th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	0	0	0	0	0	50	688	0	0	0	0
Future Volume (vph)	54	0	0	0	0	0	50	688	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6											
Lane Util. Factor	1.00											
Fpb. ped/bikes	1.00											
Flpb. ped/bikes	0.97											
Frt	1.00											
Flt Protected	0.95											
Satd. Flow (prot)	1721											
Flt Permitted	1.00											
Satd. Flow (perm)	1371											
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	0	0	0	0	0	54	748	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	59	0	0	0	0	0	802	0	0	0	0
Confl. Peds. (#/hr)	20											
Confl. Bikes (#/hr)	10											
Parking (#/hr)	5											
Turn Type	Perm	NA					Perm	NA				
Protected Phases	2											
Permitted Phases	2											
Actuated Green, G (s)	6.0											
Effective Green, g (s)	6.0											
Actuated g/C Ratio	0.10											
Clearance Time (s)	3.6											
Vehicle Extension (s)	3.0											
Lane Grp Cap. (vph)	137											
v/s Ratio Prot	c0.04											
v/s Ratio Perm	0.43											
v/g Ratio	0.29											
Uniform Delay, d1	25.4											
Progression Factor	1.00											
Incremental Delay, d2	2.2											
Delay (s)	27.6											
Level of Service	C											
Approach Delay (s)	27.6											
Approach LOS	C											
<b>Intersection Summary</b>												
HCM 2000 Control Delay	3.9											
HCM 2000 Volume to Capacity ratio	0.31											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	31.3%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
PM Existing

W-Trans

HCM Signalized Intersection Capacity Analysis  
7: US 101 SB On/Davis St & 3rd St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4P	4P	4P	4P	4P							
Traffic Volume (vph)	0	708	139	213	391	0	0	0	0	265	101	49	
Future Volume (vph)	0	708	139	213	391	0	0	0	0	265	101	49	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		3.2	3.0	3.2	3.0	3.2				3.0	3.0		
Lane Util. Factor		0.95	0.97	0.95	0.97	0.95				0.91	0.91		
Frb. ped/bikes		1.00	1.00	1.00	1.00	1.00				1.00	1.00		
Flpb. ped/bikes		1.00	1.00	1.00	1.00	1.00				1.00	1.00		
Frt		0.98	1.00	1.00	1.00	1.00				1.00	0.97		
Flt Protected		1.00	1.00	0.95	1.00	1.00				0.95	0.98		
Satd. Flow (prot)		3435	3433	3539	3433	3539				1610	3215		
Flt Permitted		1.00	0.95	1.00	1.00	0.95				0.95	0.98		
Satd. Flow (perm)		3435	3433	3539	3433	3539				1610	3215		
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Adj. Flow (vph)	0	814	160	245	449	0	0	0	0	305	116	56	
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	0	0	0	35	
Lane Group Flow (vph)	0	953	0	245	449	0	0	0	0	159	283	0	
Confl. Peds. (#/hr)		15										5	
Confl. Bikes (#/hr)		5										5	
Turn Type	NA	NA	Prot	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2		1	6						Perm	4		
Permitted Phases											4		
Actuated Green, G (s)	28.1	8.9	40.0							13.8	13.8		
Effective Green, g (s)	28.1	8.9	40.0							13.8	13.8		
Actuated G/C Ratio	0.47	0.15	0.67							0.23	0.23		
Clearance Time (s)	3.2	3.0	3.2							3.0	3.0		
Vehicle Extension (s)	2.8	2.4	2.4							4.0	4.0		
Lane Grp Cap (vph)	1608	509	2359							370	739		
v/s Ratio Prot	c0.28		c0.07	0.13									
v/c Ratio	0.59	0.48	0.19							c0.10	0.09		
Uniform Delay, d1	11.7	23.4	3.8							0.43	0.38		
Progression Factor	0.74	1.00	0.26							1.00	1.00		
Incremental Delay, d2	1.4	0.4	0.2							1.1	0.5		
Delay (s)	10.1	23.8	1.1							20.8	20.0		
Level of Service	B	C	A							C	B		
Approach Delay (s)	10.1	9.1					0.0			20.3			
Approach LOS	B	A					A			C			
<b>Intersection Summary</b>													
HCM 2000 Control Delay	12.0											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)	9.2
Intersection Capacity Utilization	50.0%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
AM Existing

W-Trans

HCM Signalized Intersection Capacity Analysis  
7: US 101 SB On/Davis St & 3rd St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4P	4P	4P	4P	4P							
Traffic Volume (vph)	0	598	165	351	638	0	0	0	0	208	232	140	
Future Volume (vph)	0	598	165	351	638	0	0	0	0	208	232	140	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		3.2	3.0	3.2	3.0	3.2				3.0	3.0		
Lane Util. Factor		0.95	0.97	0.95	0.97	0.95				0.91	0.91		
Frb. ped/bikes		1.00	1.00	1.00	1.00	1.00				1.00	1.00		
Flpb. ped/bikes		1.00	1.00	1.00	1.00	1.00				1.00	1.00		
Frt		0.97	1.00	1.00	1.00	1.00				1.00	0.95		
Flt Protected		1.00	1.00	0.95	1.00	1.00				0.95	1.00		
Satd. Flow (prot)		3390	3433	3539	3433	3539				1610	3166		
Flt Permitted		1.00	0.95	1.00	1.00	0.95				0.95	1.00		
Satd. Flow (perm)		3390	3433	3539	3433	3539				1610	3166		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	0	636	176	373	679	0	0	0	0	221	247	149	
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	0	77	
Lane Group Flow (vph)	0	793	0	373	679	0	0	0	0	199	341	0	
Confl. Peds. (#/hr)		20										10	
Confl. Bikes (#/hr)		5										5	
Turn Type	NA	NA	Prot	NA	NA	NA	NA	NA	NA	Perm	NA	NA	
Protected Phases	2		1	6							4		
Permitted Phases											4		
Actuated Green, G (s)	54.3	15.5	72.8							21.0	21.0		
Effective Green, g (s)	54.3	15.5	72.8							21.0	21.0		
Actuated G/C Ratio	0.54	0.16	0.73							0.21	0.21		
Clearance Time (s)	3.2	3.0	3.2							3.0	3.0		
Vehicle Extension (s)	2.8	2.4	2.4							4.0	4.0		
Lane Grp Cap (vph)	1840	532	2576							338	664		
v/s Ratio Prot	c0.23		c0.11	0.19									
v/c Ratio	0.43	0.70	0.26							c0.12	0.11		
Uniform Delay, d1	13.6	40.1	4.6							0.59	0.51		
Progression Factor	0.89	1.43	0.16							1.00	1.00		
Incremental Delay, d2	0.6	3.1	0.2							3.1	0.9		
Delay (s)	12.8	60.3	0.9							38.7	35.9		
Level of Service	B	E	A							D	D		
Approach Delay (s)	12.8	22.0					0.0			36.8			
Approach LOS	B	A					A			D			
<b>Intersection Summary</b>													
HCM 2000 Control Delay	22.7											HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51												
Actuated Cycle Length (s)	100.0											Sum of lost time (s)	9.2
Intersection Capacity Utilization	55.9%											ICU Level of Service	B
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
PM Existing

W-Trans

HCM Signalized Intersection Capacity Analysis  
8: US 101 NB Off/Morgan St & 3rd St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	253	713	0	0	548	262	54	164	206	0	0	0
Future Volume (vph)	253	713	0	0	548	262	54	164	206	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.88	0.88	0.88	1.00	0.97	0.88
Frb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Satd. Flow (prot)	1770	3539	3539	3539	1542	3496	2707	3496	2707	1000	1900	1900
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Satd. Flow (perm)	1770	3539	3539	3539	1542	3496	2707	3496	2707	1000	1900	1900
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	288	810	0	0	623	298	61	186	234	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	207	0	0	193	0	0	0
Lane Group Flow (vph)	288	810	0	0	623	91	0	247	41	0	0	0
Confl. Peds. (#/hr)						10		10				
Confl. Bikes (#/hr)						5		5				

Turn Type	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		6		8	
Permitted Phases				6	8		8
Actuated Green, G (s)	21.9	43.2	18.3	18.3	10.4	10.4	10.4
Effective Green, g (s)	21.9	43.2	18.3	18.3	10.4	10.4	10.4
Actuated g/C Ratio	0.36	0.72	0.31	0.31	0.17	0.17	0.17
Clearance Time (s)	3.0	3.2	3.2	3.2	3.2	3.2	3.2
Vehicle Extension (s)	2.6	2.6	3.1	3.1	2.6	2.6	2.6
Lane Grp Cap (vph)	646	2548	1079	470	605	469	
v/s Ratio Prot	c0.16	0.23		c0.18			
v/s Ratio Perm	0.45	0.32	0.58	0.19	0.41	0.09	
Uniform Delay, d1	14.4	3.1	17.6	15.4	22.1	20.8	
Progression Factor	0.56	1.26	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.8	0.3	0.8	0.2	0.4	0.1	
Delay (s)	9.9	4.1	18.4	15.6	22.4	20.9	
Level of Service	A	A	B	B	C	C	
Approach Delay (s)	5.6		17.5		21.7		0.0
Approach LOS	A		B		C		A

Intersection Summary	
HCM 2000 Control Delay	13.1
HCM 2000 Volume to Capacity ratio	0.49
Actuated Cycle Length (s)	60.0
Intersection Capacity Utilization	50.0%
Analysis Period (min)	15
c Critical Lane Group	

AC Hotel Traffic Impact Study  
AM Existing

W-Trans

HCM Signalized Intersection Capacity Analysis  
8: US 101 NB Off/Morgan St & 3rd St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	106	702	0	0	875	391	93	231	336	0	0	0
Future Volume (vph)	106	702	0	0	875	391	93	231	336	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6	3.6	3.6	3.6	3.6	3.6	4.4	4.4	4.4	4.4	4.4	4.4
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.88	0.88	0.88	1.00	0.96	0.88
Frb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.85	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Satd. Flow (prot)	1770	3539	3539	3539	1532	3489	2686	3489	2686	1000	1900	1900
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Satd. Flow (perm)	1770	3539	3539	3539	1532	3489	2686	3489	2686	1000	1900	1900
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	110	731	0	0	911	407	97	241	350	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	255	0	0	295	0	0	0
Lane Group Flow (vph)	110	731	0	0	911	152	0	338	55	0	0	0
Confl. Peds. (#/hr)						10		10				
Confl. Bikes (#/hr)						5		5				

Turn Type	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		6		8	
Permitted Phases				6	8		8
Actuated Green, G (s)	35.3	76.2	37.3	37.3	15.8	15.8	15.8
Effective Green, g (s)	35.3	76.2	37.3	37.3	15.8	15.8	15.8
Actuated g/C Ratio	0.35	0.76	0.37	0.37	0.16	0.16	0.16
Clearance Time (s)	3.6	3.6	3.6	3.6	4.4	4.4	4.4
Vehicle Extension (s)	2.6	2.6	3.1	3.1	2.6	2.6	2.6
Lane Grp Cap (vph)	624	2696	1320	571	551	424	
v/s Ratio Prot	0.06	c0.21		c0.26			
v/s Ratio Perm	0.18	0.27	0.69	0.27	0.61	0.13	
Uniform Delay, d1	22.3	3.6	26.5	21.8	39.3	36.2	
Progression Factor	1.08	0.63	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.2	1.6	0.3	1.8	0.1	
Delay (s)	24.6	2.5	28.1	22.1	41.0	36.3	
Level of Service	C	A	C	C	D	D	
Approach Delay (s)	5.4		26.2		38.6		0.0
Approach LOS	A		C		D		A

Intersection Summary	
HCM 2000 Control Delay	23.1
HCM 2000 Volume to Capacity ratio	0.52
Actuated Cycle Length (s)	100.0
Intersection Capacity Utilization	55.9%
Analysis Period (min)	15
c Critical Lane Group	

AC Hotel Traffic Impact Study  
PM Existing

W-Trans

HCM Signalized Intersection Capacity Analysis

1: Davis St/US 101 SB Off & 6th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	70	11	194	59	0	0	0	0	158	443	42
Future Volume (vph)	0	70	11	194	59	0	0	0	0	158	443	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			3.5							3.7
Lane Util. Factor		1.00		1.00						0.95		0.99
Frbp, ped/bikes		0.99		1.00						0.98		0.99
Flpb, ped/bikes		1.00		0.98						0.99		0.99
Frt		0.98		1.00						0.99		0.99
Flt Protected		1.00		0.96						0.99		0.99
Satd. Flow (prot)		1588		1538						3404		3404
Flt Permitted		1.00		0.71						0.99		0.99
Satd. Flow (perm)		1588		1136						3404		3404
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	0	86	14	240	73	0	0	0	0	195	547	52
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	92	0	313	0	0	0	0	0	0	786	0
Confl. Peds. (#/hr)		20	20							20		20
Confl. Bikes (#/hr)		20	20			20				20		20
Parking (#/hr)		5	5		5							
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Protected Phases	2			6						6		4
Permitted Phases												4
Actuated Green, G (s)	26.5			26.5						26.3		26.3
Effective Green, g (s)	26.5			26.5						26.3		26.3
Actuated g/C Ratio	0.44			0.44						0.44		0.44
Clearance Time (s)	3.5			3.5						3.7		3.7
Vehicle Extension (s)	2.0			2.0						3.0		3.0
Lane Grp Cap. (vph)	701			501						1492		1492
v/s Ratio Prot	0.06											
v/s Ratio Perm				c0.28						0.23		0.23
v/c Ratio	0.13			0.62						0.53		0.53
Uniform Delay, d1	9.9			12.9						12.3		12.3
Progression Factor	1.00			1.67						1.00		1.00
Incremental Delay, d2	0.4			5.5						1.3		1.3
Delay (s)	10.3			27.0						13.6		13.6
Level of Service	B			C						B		B
Approach Delay (s)	10.3			27.0			0.0			13.6		13.6
Approach LOS	B			C			A			B		B

Intersection Summary	
HCM 2000 Control Delay	16.8
HCM 2000 Volume to Capacity ratio	0.58
Actuated Cycle Length (s)	60.0
Intersection Capacity Utilization	45.5%
Analysis Period (min)	15
c. Critical Lane Group	

Intersection Summary	
HCM 2000 Control Delay	28.8
HCM 2000 Volume to Capacity ratio	0.70
Actuated Cycle Length (s)	60.0
Intersection Capacity Utilization	55.2%
Analysis Period (min)	15
c. Critical Lane Group	

AC Hotel Traffic Impact Study  
AM Future

W-Trans

HCM Signalized Intersection Capacity Analysis

1: Davis St/US 101 SB Off & 6th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	90	25	361	83	0	0	0	0	142	414	54
Future Volume (vph)	0	90	25	361	83	0	0	0	0	142	414	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			3.5							3.7
Lane Util. Factor		1.00		1.00						0.95		0.95
Frbp, ped/bikes		0.98		1.00						0.99		0.99
Flpb, ped/bikes		1.00		0.97						0.98		0.98
Frt		0.97		1.00						0.99		0.99
Flt Protected		1.00		0.96						0.99		0.99
Satd. Flow (prot)		1559		1518						3363		3363
Flt Permitted		1.00		0.69						0.99		0.99
Satd. Flow (perm)		1559		1083						3363		3363
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	95	26	380	87	0	0	0	0	149	436	57
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	106	0	467	0	0	0	0	0	0	630	0
Confl. Peds. (#/hr)		30	30							30		30
Confl. Bikes (#/hr)		30	30			30				30		30
Parking (#/hr)		5	5		5							
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Protected Phases	2			6						6		4
Permitted Phases												4
Actuated Green, G (s)	26.5			26.5						26.3		26.3
Effective Green, g (s)	26.5			26.5						26.3		26.3
Actuated g/C Ratio	0.44			0.44						0.44		0.44
Clearance Time (s)	3.5			3.5						3.7		3.7
Vehicle Extension (s)	2.0			2.0						3.0		3.0
Lane Grp Cap. (vph)	688			478						1474		1474
v/s Ratio Prot	0.07											
v/s Ratio Perm				c0.43						0.19		0.19
v/c Ratio	0.15			0.98						0.43		0.43
Uniform Delay, d1	10.0			16.5						11.6		11.6
Progression Factor	1.00			1.72						1.00		1.00
Incremental Delay, d2	0.5			27.6						0.9		0.9
Delay (s)	10.5			56.0						12.6		12.6
Level of Service	B			E						B		B
Approach Delay (s)	10.5			56.0			0.0			12.6		12.6
Approach LOS	B			E			A			B		B

Intersection Summary	
HCM 2000 Control Delay	28.8
HCM 2000 Volume to Capacity ratio	0.70
Actuated Cycle Length (s)	60.0
Intersection Capacity Utilization	55.2%
Analysis Period (min)	15
c. Critical Lane Group	

Intersection Summary	
HCM 2000 Control Delay	28.8
HCM 2000 Volume to Capacity ratio	0.70
Actuated Cycle Length (s)	60.0
Intersection Capacity Utilization	55.2%
Analysis Period (min)	15
c. Critical Lane Group	

AC Hotel Traffic Impact Study  
PM Future

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HCM Signalized Intersection Capacity Analysis  
 2. Morgan St/US 101 NB On & 6th St

11/07/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	57	128	0	0	232	130	29	913	139	0	0	0
Traffic Volume (vph)	57	128	0	0	232	130	29	913	139	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1747	1863	1863	1863	1505	3443						
Flt Permitted	0.52	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	954	1863	1863	1863	1505	3443						
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	139	0	0	252	141	32	992	151	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	62	139	0	0	252	141	0	1160	0	0	0	0
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Confl. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Parking (#/hr)							2					
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2				6		6		8			8
Permitted Phases	2				6		6		8			8
Actuated Green, G (s)	13.8	13.8	13.8	13.8	13.8	13.8	35.0	35.0	35.0	35.0	35.0	35.0
Effective Green, g (s)	13.8	13.8	13.8	13.8	13.8	13.8	35.0	35.0	35.0	35.0	35.0	35.0
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.58	0.58	0.58	0.58	0.58	0.58
Clearance Time (s)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	219	428	428	428	346	2008						
v/s Ratio Prot	0.07				c0.14							
v/s Ratio Perm	0.06				0.09		0.34					
v/c Ratio	0.28	0.32	0.59	0.41	0.58		0.58					
Uniform Delay, d1	19.0	19.2	20.6	19.6	7.9		7.9					
Progression Factor	0.67	1.31	1.00	1.00	0.87		0.87					
Incremental Delay, d2	0.7	0.4	2.1	0.8	1.1		1.1					
Delay (s)	13.5	25.6	22.6	20.4	8.0		8.0					
Level of Service	B	C	C	C	A		A					
Approach Delay (s)	21.9	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8
Approach LOS	C	C	C	C	C	C	A	A	A	A	A	A
Intersection Summary												
HCM 2000 Control Delay			12.7									B
HCM 2000 Volume to Capacity ratio			0.58									B
Actuated Cycle Length (s)			60.0									11.2
Intersection Capacity Utilization			62.9%									B
Analysis Period (min)			15									B
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
 AM Future

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HCM Signalized Intersection Capacity Analysis  
 2. Morgan St/US 101 NB On & 6th St

11/07/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	52	87	0	0	449	152	30	923	90	0	0	0
Traffic Volume (vph)	52	87	0	0	449	152	30	923	90	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1750	1863	1863	1863	1499	3466						
Flt Permitted	0.24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	448	1863	1863	1863	1499	3466						
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	56	94	0	0	483	163	32	992	97	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	56	94	0	0	483	163	0	1110	0	0	0	0
Confl. Peds. (#/hr)	30	30	30	30	30	30	30	30	30	30	30	30
Confl. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Parking (#/hr)							2					
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2				6		6		8			8
Permitted Phases	2				6		6		8			8
Actuated Green, G (s)	18.9	18.9	18.9	18.9	18.9	18.9	29.9	29.9	29.9	29.9	29.9	29.9
Effective Green, g (s)	18.9	18.9	18.9	18.9	18.9	18.9	29.9	29.9	29.9	29.9	29.9	29.9
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31	0.31	0.50	0.50	0.50	0.50	0.50	0.50
Clearance Time (s)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	141	586	586	472	1727							
v/s Ratio Prot	0.12				c0.26							
v/s Ratio Perm	0.40	0.16	0.82	0.35	0.64		0.32					
v/c Ratio	16.1	14.8	19.0	15.8	11.1		11.1					
Uniform Delay, d1	0.77	1.46	1.00	1.00	1.00		1.00					
Progression Factor	1.8	0.1	9.2	0.4	1.7		1.7					
Incremental Delay, d2	14.2	21.8	28.2	16.2	12.9		12.9					
Delay (s)	14.2	21.8	28.2	16.2	12.9		12.9					
Level of Service	B	C	C	B	B		B					
Approach Delay (s)	19.0	19.0	25.2	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9
Approach LOS	B	B	C	C	C	C	B	B	B	B	B	A
Intersection Summary												
HCM 2000 Control Delay			17.5									B
HCM 2000 Volume to Capacity ratio			0.71									B
Actuated Cycle Length (s)			60.0									11.2
Intersection Capacity Utilization			71.3%									C
Analysis Period (min)			15									C
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
 PM Future

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HCM Signalized Intersection Capacity Analysis

3: Davis St & 5th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	65	219	9	74	0	0	0	0	24	688	67	
Future Volume (vph)	0	65	219	9	74	0	0	0	0	24	688	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.0			3.0						3.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frbp. ped/bikes	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	
Frt	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1623	1620	1620	1620	1620	1620	1620	1620	1620	1620	1620	3255	
Flt Permitted	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1623	1620	1620	1560	1560	1560	1560	1560	1560	1560	1560	3255	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	
Adj. Flow (vph)	0	82	277	11	94	0	0	0	0	30	871	85	
RTOR Reduction (vph)	0	56	0	0	0	0	0	0	0	0	0	8	
Lane Group Flow (vph)	0	303	0	0	105	0	0	0	0	0	0	978	
Confl. Peds. (#/hr)	15	15	15	15	15	15	15	15	15	15	15	15	
Confl. Bikes (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10	
Parking (#/hr)													
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2			6						6		4	
Permitted Phases				6						6		4	
Actuated Green, G (s)	15.7			15.7						15.7		38.3	
Effective Green, g (s)	15.7			15.7						15.7		38.3	
Actuated g/C Ratio	0.26			0.26						0.26		0.64	
Clearance Time (s)	3.0			3.0						3.0		3.0	
Vehicle Extension (s)	2.0			2.0						2.0		3.0	
Lane Grp Cap. (vph)	424			408						408		2077	
v/s Ratio Prot	c0.19												
v/s Ratio Perm				0.07								0.30	
v/g Ratio	0.71			0.26						0.26		0.47	
Uniform Delay, d1	20.1			17.5						17.5		5.6	
Progression Factor	1.00			1.25						1.25		0.73	
Incremental Delay, d2	4.7			0.1						0.1		0.7	
Delay (s)	24.8			22.1						22.1		4.8	
Level of Service	C			C						C		A	
Approach Delay (s)	24.8			22.1						22.1		4.8	
Approach LOS	C			C						C		A	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	11.0											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	6.0
Intersection Capacity Utilization	46.7%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
AM Future

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HCM Signalized Intersection Capacity Analysis

3: Davis St & 5th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	100	37	59	82	0	0	0	0	54	847	66	
Future Volume (vph)	0	100	37	59	82	0	0	0	0	54	847	66	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.0			3.0						3.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frbp. ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb. ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	
Flt Protected	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1772	1772	1772	1585	1585	1585	1772	1772	1772	1772	1772	3259	
Flt Permitted	1.00	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1772	1772	1772	1298	1298	1298	1772	1772	1772	1772	1772	3259	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	0	105	39	62	86	0	0	0	0	57	892	69	
RTOR Reduction (vph)	0	33	0	0	0	0	0	0	0	0	0	4	
Lane Group Flow (vph)	0	111	0	0	148	0	0	0	0	0	0	1014	
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20	
Confl. Bikes (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10	
Parking (#/hr)													
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2			6						6		4	
Permitted Phases				6						6		4	
Actuated Green, G (s)	9.9			9.9						9.9		44.1	
Effective Green, g (s)	9.9			9.9						9.9		44.1	
Actuated g/C Ratio	0.17			0.17						0.17		0.74	
Clearance Time (s)	3.0			3.0						3.0		3.0	
Vehicle Extension (s)	2.0			2.0						2.0		3.0	
Lane Grp Cap. (vph)	292			214						214		2395	
v/s Ratio Prot	0.06												
v/s Ratio Perm				c0.11								0.31	
v/g Ratio	0.38			0.69						0.69		0.42	
Uniform Delay, d1	22.3			23.6						23.6		3.1	
Progression Factor	1.00			0.72						0.72		0.88	
Incremental Delay, d2	0.3			7.4						7.4		0.5	
Delay (s)	22.6			24.5						24.5		3.1	
Level of Service	C			C						C		A	
Approach Delay (s)	22.6			24.5						24.5		3.1	
Approach LOS	C			C						C		A	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	7.7											HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.0%											ICU Level of Service	B
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
PM Future

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HCM Signalized Intersection Capacity Analysis  
4: Morgan St & 5th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←	
Traffic Volume (vph)	62	18	0	0	0	8	36	70	982	3	0	0	
Future Volume (vph)	62	18	0	0	0	8	36	70	982	3	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.6	3.6		3.6	3.6	3.6	3.6	3.6	3.6				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95				
Frbp. ped/bikes	1.00	1.00		1.00	0.96	1.00	1.00	1.00	1.00				
Fllb. ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00				
Frt	1.00	1.00		1.00	0.85	1.00	1.00	1.00	1.00				
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	1.00	1.00				
Satd. Flow (prot)	1743	1863		1863	1512	3522	1.00	1.00	1.00				
Flt Permitted	0.75	1.00		1.00	1.00	1.00	1.00	1.00	1.00				
Satd. Flow (perm)	1380	1863		1863	1512	3522	1.00	1.00	1.00				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	67	20	0	0	9	39	76	1067	3	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	34	0	0	0	0	0	0	
Lane Group Flow (vph)	67	20	0	0	9	5	0	1146	0	0	0	0	
Confl. Peds. (#/hr)	15			15	15	15	15	15	15				
Confl. Bikes (#/hr)				10	10	10	10	10	10				
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA	
Protected Phases	2			6			6		8			8	
Permitted Phases	2			6			6		8			8	
Actuated Green, G (s)	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	45.6			45.6	
Effective Green, g (s)	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	45.6			45.6	
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.76			0.76	
Clearance Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6			3.6	
Vehicle Extension (s)	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0			3.0	
Lane Grp Cap (vph)	165	223		223	181		2676						
v/s Ratio Prot	0.01			0.00			0.33						
v/s Ratio Perm	c0.05			0.00			0.43						
v/c Ratio	0.41	0.09		0.04	0.03		0.33						
Uniform Delay, d1	24.4	23.5		23.3	23.3		2.6						
Progression Factor	1.25	1.28		1.00	1.00		0.83						
Incremental Delay, d2	1.5	0.2		0.0	0.0		0.5						
Delay (s)	32.1	30.1		23.4	23.3		2.6						
Level of Service	C	C		C	C		A						
Approach Delay (s)	31.6			23.3			2.6					0.0	
Approach LOS	C			C			A					A	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	5.3											HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	7.2
Intersection Capacity Utilization	51.9%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
AM Future

W-Trans

HCM Signalized Intersection Capacity Analysis  
4: Morgan St & 5th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←	
Traffic Volume (vph)	184	72	0	0	0	77	141	50	739	53	0	0	
Future Volume (vph)	184	72	0	0	0	77	141	50	739	53	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.6	3.6		3.6	3.6	3.6	3.6	3.6	3.6				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95				
Frbp. ped/bikes	1.00	1.00		1.00	0.96	1.00	1.00	1.00	1.00				
Fllb. ped/bikes	0.98	1.00		1.00	1.00	1.00	1.00	1.00	1.00				
Frt	1.00	1.00		1.00	0.85	1.00	1.00	1.00	1.00				
Flt Protected	0.95	1.00		1.00	1.00	1.00	1.00	1.00	1.00				
Satd. Flow (prot)	1738	1863		1863	1512	3479	1.00	1.00	1.00				
Flt Permitted	0.70	1.00		1.00	1.00	1.00	1.00	1.00	1.00				
Satd. Flow (perm)	1285	1863		1863	1512	3479	1.00	1.00	1.00				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	200	78	0	0	84	153	54	803	58	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	116	0	7	0	0	0	0	
Lane Group Flow (vph)	200	78	0	0	84	37	0	908	0	0	0	0	
Confl. Peds. (#/hr)	20			20	20	20	20	20	20				
Confl. Bikes (#/hr)				15	15	15	15	15	15				
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA	
Protected Phases	2			6			6		8			8	
Permitted Phases	2			6			6		8			8	
Actuated Green, G (s)	14.5	14.5		14.5	14.5	14.5	14.5	14.5	38.3			38.3	
Effective Green, g (s)	14.5	14.5		14.5	14.5	14.5	14.5	14.5	38.3			38.3	
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.24	0.24	0.64			0.64	
Clearance Time (s)	3.6	3.6		3.6	3.6	3.6	3.6	3.6	3.6			3.6	
Vehicle Extension (s)	3.0	3.0		2.0	2.0	2.0	2.0	2.0	3.0			3.0	
Lane Grp Cap (vph)	310	450		450	365		2220						
v/s Ratio Prot	0.04			0.05			0.26						
v/s Ratio Perm	c0.16			0.19	0.10		0.41						
v/c Ratio	0.65	0.17		0.19	0.10		0.41						
Uniform Delay, d1	20.4	18.0		18.1	17.7		5.3						
Progression Factor	1.10	1.13		1.00	1.00		0.71						
Incremental Delay, d2	1.5	0.2		0.1	0.2		0.5						
Delay (s)	27.0	20.5		18.1	17.7		4.3						
Level of Service	C	C		B	B		A						
Approach Delay (s)	25.2			17.9			4.3					0.0	
Approach LOS	C			B			A					A	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	10.6											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	7.2
Intersection Capacity Utilization	56.7%											ICU Level of Service	B
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
PM Future

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HCM Unsignalized Intersection Capacity Analysis

5: Davis St & 4th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	0	76	106	1	23	0	0	0	0	0	23	874
Future Volume (vph)	0	76	106	1	23	0	0	0	0	0	23	874
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	85	119	1	26	0	0	0	0	0	26	982
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total (vph)	204	27	517	501								
Volume Left (vph)	0	1	26	0								
Volume Right (vph)	119	0	0	10								
Head (s)	-0.32	0.04	0.06	0.02								
Departure Headway (s)	5.4	6.1	5.2	5.2								
Degree Utilization, x	0.31	0.05	0.75	0.72								
Capacity (veh/h)	643	557	677	681								
Control Delay (s)	10.8	9.4	21.0	19.2								
Approach Delay (s)	10.8	9.4	20.1									
Approach LOS	B	A	C									
Intersection Summary												
Delay	18.4											
Level of Service	C											
Intersection Capacity Utilization	43.9%											
ICU Level of Service	A											
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

5: Davis St & 4th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	0	36	100	53	205	0	0	0	0	14	882	40
Future Volume (vph)	0	36	100	53	205	0	0	0	0	14	882	40
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	39	108	57	220	0	0	0	0	15	948	43
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total (vph)	147	277	489	517								
Volume Left (vph)	0	57	15	0								
Volume Right (vph)	108	0	0	43								
Head (s)	-0.41	0.08	0.05	-0.02								
Departure Headway (s)	5.9	6.1	5.9	5.8								
Degree Utilization, x	0.24	0.47	0.79	0.83								
Capacity (veh/h)	590	571	606	615								
Control Delay (s)	10.8	14.5	26.5	29.5								
Approach Delay (s)	10.8	14.5	28.0									
Approach LOS	B	B	D									
Intersection Summary												
Delay	23.6											
Level of Service	C											
Intersection Capacity Utilization	61.2%											
ICU Level of Service	B											
Analysis Period (min)	15											

HCM Signalized Intersection Capacity Analysis  
6. Morgan St & 4th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	0	0	0	0	0	73	997	0	0	0	0
Future Volume (vph)	62	0	0	0	0	0	73	997	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6											
Lane Util. Factor	1.00											
Fpb. ped/bikes	1.00											
Flpb. ped/bikes	0.97											
Frt	1.00											
Flt Protected	0.95											
Satd. Flow (prot)	1721											
Flt Permitted	0.76											
Satd. Flow (perm)	1371											
Peak-hour factor, PHF	0.90	0.92	0.90	0.92	0.92	0.92	0.90	0.90	0.92	0.92	0.90	0.90
Adj. Flow (vph)	69	0	0	0	0	0	81	1108	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	69	0	0	0	0	0	1189	0	0	0	0
Confl. Peds. (#/hr)	20											
Confl. Bikes (#/hr)	10											
Parking (#/hr)	5											
Turn Type	Perm	NA	NA	Perm	NA	NA	Perm	NA	NA	NA	NA	NA
Protected Phases	2											
Permitted Phases	2											
Actuated Green, G (s)	6.2											
Effective Green, g (s)	6.2											
Actuated g/C Ratio	0.10											
Clearance Time (s)	3.6											
Vehicle Extension (s)	3.0											
Lane Grp Cap. (vph)	141											
v/s Ratio Prot	c0.05											
v/s Ratio Perm	0.49											
v/g Ratio	2.3											
Uniform Delay, d1	25.4											
Progression Factor	1.00											
Incremental Delay, d2	2.7											
Delay (s)	28.1											
Level of Service	C											
Approach Delay (s)	28.1											
Approach LOS	C											
Intersection Summary												
HCM 2000 Control Delay	4.0											
HCM 2000 Volume to Capacity ratio	0.44											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	40.5%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
AM Future

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HCM Signalized Intersection Capacity Analysis  
6. Morgan St & 4th St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	0	0	0	0	0	222	775	0	0	0	0
Future Volume (vph)	61	0	0	0	0	0	222	775	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6											
Lane Util. Factor	1.00											
Fpb. ped/bikes	1.00											
Flpb. ped/bikes	0.97											
Frt	1.00											
Flt Protected	0.95											
Satd. Flow (prot)	1721											
Flt Permitted	0.76											
Satd. Flow (perm)	1371											
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	0	0	0	0	0	241	842	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	66	0	0	0	0	0	1083	0	0	0	0
Confl. Peds. (#/hr)	20											
Confl. Bikes (#/hr)	10											
Parking (#/hr)	5											
Turn Type	Perm	NA	NA	Perm	NA	NA	Perm	NA	NA	NA	NA	NA
Protected Phases	2											
Permitted Phases	2											
Actuated Green, G (s)	6.2											
Effective Green, g (s)	6.2											
Actuated g/C Ratio	0.10											
Clearance Time (s)	3.6											
Vehicle Extension (s)	3.0											
Lane Grp Cap. (vph)	141											
v/s Ratio Prot	c0.05											
v/s Ratio Perm	0.47											
v/g Ratio	2.3											
Uniform Delay, d1	25.3											
Progression Factor	1.00											
Incremental Delay, d2	2.4											
Delay (s)	27.8											
Level of Service	C											
Approach Delay (s)	27.8											
Approach LOS	C											
Intersection Summary												
HCM 2000 Control Delay	4.1											
HCM 2000 Volume to Capacity ratio	0.41											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	38.7%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
PM Future

W-Trans

HCM Signalized Intersection Capacity Analysis  
7: US 101 SB On/Davis St & 3rd St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4P	4P	4P	4P	4P						
Traffic Volume (vph)	0	854	243	264	442	0	0	0	0	549	313	128
Future Volume (vph)	0	854	243	264	442	0	0	0	0	549	313	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.0	3.2	3.0	3.2				3.0	3.0	3.0
Lane Util. Factor		0.95	0.87	0.87	0.87	0.87				0.91	0.91	0.91
Frbp. ped/bikes		0.99	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Fllb. ped/bikes		1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Frt		0.97	1.00	1.00	1.00	1.00				1.00	0.97	0.97
Flt Protected		1.00	1.00	0.95	1.00	1.00				0.95	0.98	0.98
Satd. Flow (prot)		3399	3433	3539	3433	3539				1610	3226	3226
Flt Permitted		1.00	0.95	1.00	1.00	1.00				0.95	0.98	0.98
Satd. Flow (perm)		3399	3433	3539	3433	3539				1610	3226	3226
Peak-hour factor, PHF		0.87	0.87	0.87	0.87	0.87				0.87	0.87	0.87
Adj. Flow (vph)		982	279	303	508	0	0	0	0	631	360	147
RTOR Reduction (vph)		0	41	0	0	0	0	0	0	0	34	0
Lane Group Flow (vph)		0	1220	0	303	508	0	0	0	379	725	0
Confl. Peds. (#/hr)			15									5
Confl. Bikes (#/hr)			5									5
Turn Type	NA	NA	2	Prot	NA	NA	6	NA	NA	Perm	NA	NA
Protected Phases												4
Permitted Phases												4
Actuated Green, G (s)		20.2	9.6	32.8	21.0	21.0				21.0	21.0	21.0
Effective Green, g (s)		20.2	9.6	32.8	21.0	21.0				21.0	21.0	21.0
Actuated G/C Ratio		0.34	0.16	0.55	0.35	0.35				0.35	0.35	0.35
Clearance Time (s)		3.2	3.0	3.2	3.0	3.0				3.0	3.0	3.0
Vehicle Extension (s)		2.8	2.4	2.4	2.4	2.4				4.0	4.0	4.0
Lane Grp Cap (vph)		1144	549	1934						563	1129	
v/s Ratio Prot		c0.36	c0.09	0.14						c0.24	0.22	
v/c Ratio		1.07	0.55	0.26						0.67	0.64	
Uniform Delay, d1		19.9	23.2	7.2						16.6	16.4	
Progression Factor		0.95	0.79	0.37						1.00	1.00	
Incremental Delay, d2		45.3	0.8	0.3						3.5	1.4	
Delay (s)		64.3	19.1	3.0						20.0	17.8	
Level of Service		E	B	A						C	B	
Approach Delay (s)		64.3	9.0							0.0	18.5	
Approach LOS		E	A							A	B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			34.1							HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			60.0							Sum of lost time (s)		9.2
Intersection Capacity Utilization			88.9%							ICU Level of Service		E
Analysis Period (min)			15									
c Critical Lane Group												

AC Hotel Traffic Impact Study  
AM Future

W-Trans

HCM Signalized Intersection Capacity Analysis  
7: US 101 SB On/Davis St & 3rd St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4P	4P	4P	4P	4P						
Traffic Volume (vph)	0	688	247	467	787	0	0	0	0	265	489	279
Future Volume (vph)	0	688	247	467	787	0	0	0	0	265	489	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.2	3.0	3.2	3.0	3.2				3.0	3.0	3.0
Lane Util. Factor		0.95	0.97	0.95	0.97	0.95				0.91	0.91	0.91
Frbp. ped/bikes		0.99	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Fllb. ped/bikes		1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Frt		0.96	1.00	1.00	1.00	1.00				1.00	0.95	0.95
Flt Protected		1.00	1.00	0.95	1.00	1.00				0.95	1.00	1.00
Satd. Flow (prot)		3356	3433	3539	3433	3539				1610	3174	3174
Flt Permitted		1.00	0.95	1.00	1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)		3356	3433	3539	3433	3539				1610	3174	3174
Peak-hour factor, PHF		0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Adj. Flow (vph)		0	732	263	497	837	0	0	0	282	520	297
RTOR Reduction (vph)		0	34	0	0	0	0	0	0	0	64	0
Lane Group Flow (vph)		0	961	0	497	837	0	0	0	254	781	0
Confl. Peds. (#/hr)			20									10
Confl. Bikes (#/hr)			5									5
Turn Type	NA	NA	2	Prot	NA	NA	6	NA	NA	Perm	NA	NA
Protected Phases												4
Permitted Phases												4
Actuated Green, G (s)		40.8	18.5	62.3	18.5	62.3				31.5	31.5	31.5
Effective Green, g (s)		40.8	18.5	62.3	18.5	62.3				31.5	31.5	31.5
Actuated G/C Ratio		0.41	0.18	0.62	0.18	0.62				0.32	0.32	0.32
Clearance Time (s)		3.2	3.0	3.2	3.0	3.2				3.0	3.0	3.0
Vehicle Extension (s)		2.8	2.4	2.4	2.4	2.4				4.0	4.0	4.0
Lane Grp Cap (vph)		1369	635	2204						507	999	
v/s Ratio Prot		c0.29	c0.14	0.24						0.16	0.25	
v/c Ratio		0.70	0.78	0.38						0.50	0.78	
Uniform Delay, d1		24.6	38.8	9.3						27.9	31.1	
Progression Factor		1.24	1.61	0.31						1.00	1.00	
Incremental Delay, d2		2.8	4.6	0.4						1.1	4.3	
Delay (s)		33.3	67.2	3.3						28.9	35.4	
Level of Service		C	E	A						C	D	
Approach Delay (s)		33.3	27.1							0.0	33.9	
Approach LOS		C	C							A	C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			31.1							HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			100.0							Sum of lost time (s)		9.2
Intersection Capacity Utilization			71.1%							ICU Level of Service		C
Analysis Period (min)			15									
c Critical Lane Group												

AC Hotel Traffic Impact Study  
PM Future

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HCM Signalized Intersection Capacity Analysis  
8: US 101 NB Off/Morgan St & 3rd St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	323	1074	0	0	614	371	93	388	329	0	0	0
Future Volume (vph)	323	1074	0	0	614	371	93	388	329	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.88	0.88	0.88	0.88	0.88	0.88
Frb. ped/bikes	1.00	1.00	1.00	1.00	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85	1.00	0.85	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	3539	3539	1542	3505	2713	3505	2713	3505	2713	3505	2713
Flt Permitted	0.95	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	3539	3539	1542	3505	2713	3505	2713	3505	2713	3505	2713
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	367	1220	0	0	698	422	106	441	374	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	367	1220	0	0	698	327	0	547	296	0	0	0
Confl. Peds. (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10
Confl. Bikes (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Turn Type	Prot	NA	NA	NA	Perm	Perm	NA	Perm	NA	Perm	Perm	Perm
Protected Phases	5	2	2	6	6	6	8	8	8	8	8	8
Permitted Phases	15.8	37.9	19.1	19.1	19.1	19.1	15.7	15.7	15.7	15.7	15.7	15.7
Actuated Green, G (s)	0.26	0.63	0.32	0.32	0.32	0.32	0.26	0.26	0.26	0.26	0.26	0.26
Effective Green, g (s)	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Actuated g/C Ratio	2.6	2.6	2.6	3.1	3.1	3.1	2.6	2.6	2.6	2.6	2.6	2.6
Clearance Time (s)	466	2235	1126	490	917	709	0.16	0.11	0.11	0.11	0.11	0.11
Vehicle Extension (s)	c0.21	c0.34	c0.20	c0.20	c0.21	c0.21	0.60	0.42	0.42	0.42	0.42	0.42
Lane Grp Cap (vph)	0.79	0.55	0.62	0.67	0.60	0.60	0.60	0.42	0.42	0.42	0.42	0.42
v/s Ratio Prot	20.5	6.2	17.4	17.7	19.4	18.4	19.4	18.4	18.4	18.4	18.4	18.4
v/s Ratio Perm	0.95	1.52	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay, d1	1.3	0.5	1.0	3.4	1.0	0.9	0.9	0.3	0.3	0.3	0.3	0.3
Progression Factor	20.9	9.9	18.4	21.1	20.3	18.7	C	C	B	B	B	B
Incremental Delay, d2	12.4	12.4	19.4	19.4	19.4	19.6	19.6	19.6	19.6	19.6	19.6	19.6
Delay (s)	C	A	B	C	B	C	B	C	B	C	B	C
Level of Service	12.4	12.4	19.4	19.4	19.4	19.6	19.6	19.6	19.6	19.6	19.6	19.6
Approach Delay (s)	B	B	B	B	B	B	B	B	B	B	B	B
Approach LOS	B	B	B	B	B	B	B	B	B	B	B	B
Intersection Summary	Intersection Summary											
HCM 2000 Control Delay	16.4 HCM 2000 Level of Service											
HCM 2000 Volume to Capacity ratio	0.68											
Actuated Cycle Length (s)	60.0 Sum of lost time (s)											
Intersection Capacity Utilization	88.9% ICU Level of Service											
Analysis Period (min)	15											
Critical Lane Group	C											

AC Hotel Traffic Impact Study  
AM Future

W-Trans

HCM Signalized Intersection Capacity Analysis  
8: US 101 NB Off/Morgan St & 3rd St

11/07/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	152	834	0	0	1085	531	134	475	455	0	0	0
Future Volume (vph)	152	834	0	0	1085	531	134	475	455	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.88	0.88	0.88	0.88	0.88	0.88
Frb. ped/bikes	1.00	1.00	1.00	1.00	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85	1.00	0.85	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	3539	3539	1533	3501	2692	3501	2692	3501	2692	3501	2692
Flt Permitted	0.95	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	3539	3539	1533	3501	2692	3501	2692	3501	2692	3501	2692
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	158	869	0	0	1130	553	140	495	474	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	158	869	0	0	1130	387	0	635	210	0	0	0
Confl. Peds. (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10
Confl. Bikes (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Turn Type	Prot	NA	NA	NA	Perm	Perm	NA	Perm	NA	Perm	Perm	Perm
Protected Phases	5	2	2	6	6	6	8	8	8	8	8	8
Permitted Phases	21.3	68.3	43.4	43.4	43.4	43.4	23.7	23.7	23.7	23.7	23.7	23.7
Actuated Green, G (s)	0.21	0.68	0.43	0.43	0.43	0.43	0.24	0.24	0.24	0.24	0.24	0.24
Effective Green, g (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Actuated g/C Ratio	2.6	2.6	2.6	3.1	3.1	3.1	2.6	2.6	2.6	2.6	2.6	2.6
Clearance Time (s)	377	2417	1535	665	829	638	0.18	0.08	0.08	0.08	0.08	0.08
Vehicle Extension (s)	c0.09	c0.25	c0.32	c0.32	c0.32	c0.32	0.25	0.18	0.18	0.18	0.18	0.18
Lane Grp Cap (vph)	0.42	0.36	0.74	0.58	0.74	0.58	0.74	0.58	0.74	0.58	0.74	0.58
v/s Ratio Prot	34.0	6.7	23.5	21.4	23.5	21.4	35.6	31.6	31.6	31.6	31.6	31.6
v/s Ratio Perm	0.71	0.48	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay, d1	2.5	0.3	1.9	1.3	1.9	1.3	4.1	0.2	0.2	0.2	0.2	0.2
Progression Factor	26.5	3.5	25.4	22.8	25.4	22.8	39.7	31.8	31.8	31.8	31.8	31.8
Incremental Delay, d2	7.0	7.0	24.5	24.5	24.5	24.5	36.3	0.0	0.0	0.0	0.0	0.0
Delay (s)	C	A	C	C	C	C	D	C	C	D	C	C
Level of Service	7.0	7.0	24.5	24.5	24.5	24.5	36.3	0.0	0.0	0.0	0.0	0.0
Approach Delay (s)	A	A	A	A	A	A	A	A	A	A	A	A
Approach LOS	A	A	A	A	A	A	A	A	A	A	A	A
Intersection Summary	Intersection Summary											
HCM 2000 Control Delay	23.3 HCM 2000 Level of Service											
HCM 2000 Volume to Capacity ratio	0.67											
Actuated Cycle Length (s)	100.0 Sum of lost time (s)											
Intersection Capacity Utilization	71.1% ICU Level of Service											
Analysis Period (min)	15											
Critical Lane Group	C											

AC Hotel Traffic Impact Study  
PM Future

W-Trans

HCM Signalized Intersection Capacity Analysis  
1: Davis St/US 101 SB Off & 6th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	62	10	50	44	0	0	0	0	108	409	37	
Future Volume (vph)	0	62	10	50	44	0	0	0	0	108	409	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.5											3.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frbp, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Fllb, ped/bikes	1.00	0.98	1.00	1.00	0.97	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Fl Protected	1.00	1.00	1.00	1.00	0.97	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Satd. Flow (prot)	1589	1589	1589	1565	1565	1544	1544	1544	1544	3397	3397	3420	
Flt Permitted	1.00	1.00	1.00	0.85	0.85	1.00	0.80	0.80	1.00	0.99	0.99	0.99	
Satd. Flow (perm)	1589	1589	1589	1359	1359	1268	1268	1268	1268	3397	3397	3420	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	
Adj. Flow (vph)	0	77	12	62	54	0	0	0	0	133	505	46	
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	9	0	
Lane Group Flow (vph)	0	82	0	0	116	0	0	0	0	0	675	0	
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20	
Confl. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20	
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5	
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2	2	2	6	6	6	6	6	6	6	6	4	
Permitted Phases												4	
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.7	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	
Lane Grp Cap. (vph)	701	701	701	600	600	600	600	600	600	600	1499	1499	
v/s Ratio Prot	0.05	0.05	0.05	c0.09	c0.09	c0.09	c0.09	c0.09	c0.09	c0.09	0.20	0.20	
v/s Ratio Perm	0.12	0.12	0.12	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.45	0.45	
Uniform Delay, d1	9.9	9.9	9.9	10.2	10.2	10.2	10.2	10.2	10.2	10.2	11.8	11.8	
Progression Factor	1.00	1.00	1.00	0.76	0.76	0.76	0.76	0.76	0.76	0.76	1.00	1.00	
Incremental Delay, d2	0.3	0.3	0.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0	1.0	
Delay (s)	10.2	10.2	10.2	8.5	8.5	8.5	8.5	8.5	8.5	8.5	12.8	12.8	
Level of Service	B	B	B	A	A	A	A	A	A	A	B	B	
Approach Delay (s)	10.2	10.2	10.2	8.5	8.5	8.5	8.5	8.5	8.5	8.5	12.8	12.8	
Approach LOS	B	B	B	A	A	A	A	A	A	A	B	B	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	12.0											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	7.2
Intersection Capacity Utilization	34.2%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
AM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
1: Davis St/US 101 SB Off & 6th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	60	22	113	74	0	0	0	0	62	382	48	
Future Volume (vph)	0	60	22	113	74	0	0	0	0	62	382	48	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.5											3.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frbp, ped/bikes	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99	1.00	0.99	0.99	
Fllb, ped/bikes	1.00	0.96	1.00	1.00	0.97	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Fl Protected	1.00	1.00	1.00	1.00	0.97	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Satd. Flow (prot)	1542	1542	1542	1544	1544	1544	1544	1544	1544	3397	3397	3420	
Flt Permitted	1.00	1.00	1.00	0.80	0.80	1.00	0.80	0.80	1.00	0.99	0.99	0.99	
Satd. Flow (perm)	1542	1542	1542	1268	1268	1268	1268	1268	1268	3397	3397	3420	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	0	63	23	119	78	0	0	0	0	65	402	51	
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	14	0	
Lane Group Flow (vph)	0	73	0	0	197	0	0	0	0	0	504	0	
Confl. Peds. (#/hr)	30	30	30	30	30	30	30	30	30	30	30	30	
Confl. Bikes (#/hr)	30	30	30	30	30	30	30	30	30	30	30	30	
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5	
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2	2	2	6	6	6	6	6	6	6	6	4	
Permitted Phases												4	
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.7	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	
Lane Grp Cap. (vph)	681	681	681	560	560	560	560	560	560	560	1489	1489	
v/s Ratio Prot	0.05	0.05	0.05	c0.16	c0.16	c0.16	c0.16	c0.16	c0.16	c0.16	0.15	0.15	
v/s Ratio Perm	0.11	0.11	0.11	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.34	0.34	
Uniform Delay, d1	9.8	9.8	9.8	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	
Progression Factor	1.00	1.00	1.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	
Incremental Delay, d2	0.3	0.3	0.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.6	0.6	
Delay (s)	10.1	10.1	10.1	13.8	13.8	13.8	13.8	13.8	13.8	13.8	11.7	11.7	
Level of Service	B	B	B	B	B	B	B	B	B	B	B	B	
Approach Delay (s)	10.1	10.1	10.1	13.8	13.8	13.8	13.8	13.8	13.8	13.8	11.7	11.7	
Approach LOS	B	B	B	A	A	A	A	A	A	A	B	B	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	12.1											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	7.2
Intersection Capacity Utilization	37.6%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
PM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
1: Davis St/US 101 SB Off & 6th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	62	10	50	44	0	0	0	0	108	409	37	
Future Volume (vph)	0	62	10	50	44	0	0	0	0	108	409	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.5											3.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frbp, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Fllb, ped/bikes	1.00	0.98	1.00	1.00	0.97	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Fl Protected	1.00	1.00	1.00	1.00	0.97	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Satd. Flow (prot)	1589	1589	1589	1565	1565	1544	1544	1544	1544	3397	3397	3420	
Flt Permitted	1.00	1.00	1.00	0.85	0.85	1.00	0.80	1.00	0.80	1.00	0.99	0.99	
Satd. Flow (perm)	1589	1589	1589	1359	1359	1268	1268	1268	1268	3397	3397	3420	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	
Adj. Flow (vph)	0	77	12	62	54	0	0	0	0	133	505	46	
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	9	0	
Lane Group Flow (vph)	0	82	0	0	116	0	0	0	0	0	675	0	
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20	
Confl. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20	
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5	
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2	2	2	6	6	6	6	6	6	6	6	4	
Permitted Phases												4	
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.7	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	
Lane Grp Cap. (vph)	701	701	701	600	600	600	600	600	600	600	1499	1499	
v/s Ratio Prot	0.05	0.05	0.05	c0.09	c0.09	c0.09	c0.09	c0.09	c0.09	c0.09	0.20	0.20	
v/s Ratio Perm	0.12	0.12	0.12	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.45	0.45	
Uniform Delay, d1	9.9	9.9	9.9	10.2	10.2	10.2	10.2	10.2	10.2	10.2	11.8	11.8	
Progression Factor	1.00	1.00	1.00	0.76	0.76	0.76	0.76	0.76	0.76	0.76	1.00	1.00	
Incremental Delay, d2	0.3	0.3	0.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0	1.0	
Delay (s)	10.2	10.2	10.2	8.5	8.5	8.5	8.5	8.5	8.5	8.5	12.8	12.8	
Level of Service	B	B	B	A	A	A	A	A	A	A	B	B	
Approach Delay (s)	10.2	10.2	10.2	8.5	8.5	8.5	8.5	8.5	8.5	8.5	12.8	12.8	
Approach LOS	B	B	B	A	A	A	A	A	A	A	B	B	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	12.0											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	7.2
Intersection Capacity Utilization	34.2%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
AM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
1: Davis St/US 101 SB Off & 6th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	60	22	113	74	0	0	0	0	62	382	48	
Future Volume (vph)	0	60	22	113	74	0	0	0	0	62	382	48	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.5											3.7	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frbp, ped/bikes	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99	1.00	0.99	0.99	
Fllb, ped/bikes	1.00	0.96	1.00	1.00	0.97	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Fl Protected	1.00	1.00	1.00	1.00	0.97	1.00	0.99	1.00	0.99	1.00	0.99	0.99	
Satd. Flow (prot)	1542	1542	1542	1544	1544	1544	1544	1544	1544	3397	3397	3420	
Flt Permitted	1.00	1.00	1.00	0.80	0.80	1.00	0.80	1.00	0.80	1.00	0.99	0.99	
Satd. Flow (perm)	1542	1542	1542	1268	1268	1268	1268	1268	1268	3397	3397	3420	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	0	63	23	119	78	0	0	0	0	65	402	51	
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	14	0	
Lane Group Flow (vph)	0	73	0	0	197	0	0	0	0	0	504	0	
Confl. Peds. (#/hr)	30	30	30	30	30	30	30	30	30	30	30	30	
Confl. Bikes (#/hr)	30	30	30	30	30	30	30	30	30	30	30	30	
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5	
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2	2	2	6	6	6	6	6	6	6	6	4	
Permitted Phases												4	
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.7	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	
Lane Grp Cap. (vph)	681	681	681	560	560	560	560	560	560	560	1489	1489	
v/s Ratio Prot	0.05	0.05	0.05	c0.16	c0.16	c0.16	c0.16	c0.16	c0.16	c0.16	0.15	0.15	
v/s Ratio Perm	0.11	0.11	0.11	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.34	0.34	
Uniform Delay, d1	9.8	9.8	9.8	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	
Progression Factor	1.00	1.00	1.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	
Incremental Delay, d2	0.3	0.3	0.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.6	0.6	
Delay (s)	10.1	10.1	10.1	13.8	13.8	13.8	13.8	13.8	13.8	13.8	11.7	11.7	
Level of Service	B	B	B	B	B	B	B	B	B	B	B	B	
Approach Delay (s)	10.1	10.1	10.1	13.8	13.8	13.8	13.8	13.8	13.8	13.8	11.7	11.7	
Approach LOS	B	B	B	A	A	A	A	A	A	A	B	B	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	12.1											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	7.2
Intersection Capacity Utilization	37.6%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
PM Existing plus Project

W-Trans



HCM Signalized Intersection Capacity Analysis  
 2. Morgan St/US 101 NB On & 6th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	51	114	0	0	73	63	26	612	60	0	0	0
Traffic Volume (vph)	51	114	0	0	73	63	26	612	60	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00	1.00	1.00
Fpb. ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1740	1863	1863	1863	1492	3470	3470	3470	3470	3470	3470	3470
Flt Permitted	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1292	1863	1863	1863	1492	3470	3470	3470	3470	3470	3470	3470
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	124	0	0	79	68	28	665	65	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	55	124	0	0	79	68	0	750	0	0	0	0
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Confl. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Parking (#/hr)												
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2				6		6		8			8
Permitted Phases	2				6		6		8			8
Actuated Green, G (s)	9.6	9.6	9.6	9.6	9.6	9.6	39.2	39.2	39.2	39.2	39.2	39.2
Effective Green, g (s)	9.6	9.6	9.6	9.6	9.6	9.6	39.2	39.2	39.2	39.2	39.2	39.2
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.65	0.65	0.65	0.65	0.65	0.65
Clearance Time (s)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	206	298	298	298	238	2267	2267	2267	2267	2267	2267	2267
v/s Ratio Prot		c0.07			0.04		0.05	0.22				0.22
v/s Ratio Perm	0.04				0.27	0.29	0.33					0.33
v/c Ratio	22.1	22.7	22.7	22.1	22.2	22.2	4.6	4.6	4.6	4.6	4.6	4.6
Uniform Delay, d1	0.89	1.01	1.01	0.89	1.00	1.00	0.98	0.98	0.98	0.98	0.98	0.98
Progression Factor	0.7	0.9	0.9	0.7	0.5	0.7	0.4	0.4	0.4	0.4	0.4	0.4
Incremental Delay, d2	20.5	23.8	23.8	20.5	22.6	22.8	4.9	4.9	4.9	4.9	4.9	4.9
Delay (s)	C	C	C	C	C	C	A	A	A	A	A	A
Level of Service	C	C	C	C	C	C	A	A	A	A	A	A
Approach Delay (s)		22.8			22.7		4.9	4.9	4.9	4.9	4.9	4.9
Approach LOS		C			C		A	A	A	A	A	A
Intersection Summary												
HCM 2000 Control Delay	10.3											
HCM 2000 Volume to Capacity ratio	0.35											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	48.6%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
 AM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
 2. Morgan St/US 101 NB On & 6th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	46	77	0	0	171	170	27	707	82	0	0	0
Traffic Volume (vph)	46	77	0	0	171	170	27	707	82	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00	1.00	1.00
Fpb. ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1731	1863	1863	1863	1490	3465	3465	3465	3465	3465	3465	3465
Flt Permitted	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1169	1863	1863	1863	1490	3465	3465	3465	3465	3465	3465	3465
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	49	83	0	0	184	183	29	760	88	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	49	83	0	0	184	183	0	866	0	0	0	0
Confl. Peds. (#/hr)	30	30	30	30	30	30	30	30	30	30	30	30
Confl. Bikes (#/hr)	30	30	30	30	30	30	30	30	30	30	30	30
Parking (#/hr)												
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2				6		6		8			8
Permitted Phases	2				6		6		8			8
Actuated Green, G (s)	13.2	13.2	13.2	13.2	13.2	13.2	35.6	35.6	35.6	35.6	35.6	35.6
Effective Green, g (s)	13.2	13.2	13.2	13.2	13.2	13.2	35.6	35.6	35.6	35.6	35.6	35.6
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.22	0.22	0.59	0.59	0.59	0.59	0.59	0.59
Clearance Time (s)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	257	409	409	409	327	2049	2049	2049	2049	2049	2049	2049
v/s Ratio Prot		0.04			0.10		c0.12	0.25				0.25
v/s Ratio Perm	0.19	0.20	0.20	0.19	0.45	0.56	0.42	0.42	0.42	0.42	0.42	0.42
v/c Ratio	19.1	19.1	19.1	19.1	20.3	20.8	6.6	6.6	6.6	6.6	6.6	6.6
Uniform Delay, d1	0.72	1.12	1.12	0.72	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Progression Factor	0.4	0.2	0.2	0.4	0.8	2.1	0.6	0.6	0.6	0.6	0.6	0.6
Incremental Delay, d2	14.0	21.6	21.6	14.0	21.0	22.9	6.9	6.9	6.9	6.9	6.9	6.9
Delay (s)	B	C	C	B	C	C	A	A	A	A	A	A
Level of Service	B	C	C	B	C	C	A	A	A	A	A	A
Approach Delay (s)		18.8			22.0		6.9	6.9	6.9	6.9	6.9	6.9
Approach LOS		B			C		A	A	A	A	A	A
Intersection Summary												
HCM 2000 Control Delay	12.0											
HCM 2000 Volume to Capacity ratio	0.46											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	56.3%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
 PM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis

3: Davis St & 5th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	22	18	29	35	0	0	0	0	21	433	20	
Future Volume (vph)	0	22	18	29	35	0	0	0	0	21	433	20	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.0												
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frb. ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb. ped/bikes	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1715	1583	1583	1583	1583	1583	1583	1583	1583	1583	1583	3281	
Flt Permitted	1.00	0.86	1.00	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1715	1385	1385	1385	1385	1385	1385	1385	1385	1385	1385	3281	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	
Adj. Flow (vph)	0	28	23	37	44	0	0	0	0	27	548	25	
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	2	0	
Lane Group Flow (vph)	0	31	0	0	81	0	0	0	0	0	598	0	
Confl. Peds. (#/hr)	15	15	15	15	15	15	15	15	15	15	15	15	
Confl. Bikes (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10	
Parking (#/hr)													
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2	6	6	6	6	6	6	6	6	6	6	6	
Permitted Phases													
Actuated Green, G (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	46.0	
Effective Green, g (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	46.0	
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.77	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	
Lane Grp Cap. (vph)	228	184	184	184	184	184	184	184	184	184	184	2515	
v/s Ratio Prot	0.02												
v/s Ratio Perm													
v/g Ratio	0.14	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.18	
Uniform Delay, d1	23.0	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	2.0	
Progression Factor	1.00	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	0.54	
Incremental Delay, d2	0.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.2	
Delay (s)	23.0	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	1.3	
Level of Service	C	C	C	C	C	C	C	C	C	C	C	A	
Approach Delay (s)	23.0	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	1.3	
Approach LOS	C	C	C	C	C	C	C	C	C	C	C	A	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	5.9											HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	6.0
Intersection Capacity Utilization	36.7%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
AM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis

3: Davis St & 5th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	30	31	78	73	0	0	0	0	48	463	16	
Future Volume (vph)	0	30	31	78	73	0	0	0	0	48	463	16	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.0												
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frb. ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb. ped/bikes	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1695	1573	1573	1573	1573	1573	1573	1573	1573	1573	1573	3274	
Flt Permitted	1.00	0.82	1.00	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1695	1316	1316	1316	1316	1316	1316	1316	1316	1316	1316	3274	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	0	32	33	82	77	0	0	0	0	51	487	17	
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	0	0	2	0	
Lane Group Flow (vph)	0	38	0	0	159	0	0	0	0	0	553	0	
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20	
Confl. Bikes (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10	
Parking (#/hr)													
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2	6	6	6	6	6	6	6	6	6	6	6	
Permitted Phases													
Actuated Green, G (s)	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	43.7	
Effective Green, g (s)	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	43.7	
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.73	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	
Lane Grp Cap. (vph)	290	225	225	225	225	225	225	225	225	225	225	2384	
v/s Ratio Prot	0.02												
v/s Ratio Perm													
v/g Ratio	0.13	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.17	
Uniform Delay, d1	21.1	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	2.7	
Progression Factor	1.00	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.64	
Incremental Delay, d2	0.1	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	0.2	
Delay (s)	21.1	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	1.9	
Level of Service	C	C	C	C	C	C	C	C	C	C	C	A	
Approach Delay (s)	21.1	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	1.9	
Approach LOS	C	C	C	C	C	C	C	C	C	C	C	A	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	8.3											HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	6.0
Intersection Capacity Utilization	39.8%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
PM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
4: Morgan St & 5th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	19	16	0	0	7	32	54	644	3	0	0	0
Traffic Volume (vph)	19	16	0	0	7	32	54	644	3	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frb. ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1743	1863	1863	1863	1508	3518						
Satd. Flow (prot)	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Permitted	1381	1863	1863	1863	1508	3518						
Satd. Flow (perm)	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Peak-hour factor, PHF	21	17	0	0	8	35	59	700	3	0	0	0
Adj. Flow (vph)	0	0	0	0	0	31	0	0	0	0	0	0
RTOR Reduction (vph)	21	17	0	0	8	4	0	762	0	0	0	0
Lane Group Flow (vph)	15	15	15	15	15	15	15	15	15	15	15	15
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2				6		6		8			8
Permitted Phases	2	6.3	6.3	6.3	6.3	6.3	6.3	46.5	8	6.3	6.3	46.5
Actuated Green, G (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	46.5	8	6.3	6.3	46.5
Effective Green, g (s)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.78	0.10	0.10	0.10	0.78
Actuated g/C Ratio	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Clearance Time (s)	3.0	3.0	3.0	3.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	3.0
Vehicle Extension (s)	145	195	195	158	158	2726						
Lane Grp Cap (vph)	0.01	0.02	0.02	0.02	0.02	0.22	0.22	0.22	0.22	0.22	0.22	0.22
v/s Ratio Prot	0.14	0.09	0.09	0.04	0.04	0.02	0.28	0.28	0.28	0.28	0.28	0.28
v/s Ratio Perm	24.4	24.3	24.1	24.1	24.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Uniform Delay, d1	0.98	0.96	1.00	1.00	1.00	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Progression Factor	0.5	0.2	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Incremental Delay, d2	24.4	23.4	24.2	24.1	24.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Delay (s)	C	C	C	C	C	A	A	A	A	A	A	A
Level of Service	24.0	24.1	24.1	24.1	24.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Approach Delay (s)	C	C	C	C	C	A	A	A	A	A	A	A
Approach LOS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intersection Summary												
HCM 2000 Control Delay	4.2	HCM 2000 Level of Service										
HCM 2000 Volume to Capacity ratio	0.26	A										
Actuated Cycle Length (s)	60.0	Sum of lost time (s)										
Intersection Capacity Utilization	44.3%	ICU Level of Service										
Analysis Period (min)	15	7.2										
c Critical Lane Group	A											

AC Hotel Traffic Impact Study  
AM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
4: Morgan St & 5th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	34	64	0	0	68	125	70	673	47	0	0	0
Traffic Volume (vph)	34	64	0	0	68	125	70	673	47	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frb. ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1738	1863	1863	1863	1496	3475						
Satd. Flow (prot)	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Permitted	1297	1863	1863	1863	1496	3475						
Satd. Flow (perm)	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Peak-hour factor, PHF	37	70	0	0	74	136	76	732	51	0	0	0
Adj. Flow (vph)	0	0	0	0	0	117	0	5	0	0	0	0
RTOR Reduction (vph)	37	70	0	0	74	19	0	854	0	0	0	0
Lane Group Flow (vph)	20	20	20	20	20	20	20	20	20	20	20	20
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2				6		6		8			8
Permitted Phases	2	8.2	8.2	8.2	8.2	8.2	8.2	44.6	8	8.2	8.2	44.6
Actuated Green, G (s)	8.2	8.2	8.2	8.2	8.2	8.2	8.2	44.6	8	8.2	8.2	44.6
Effective Green, g (s)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.74	0.14	0.14	0.14	0.74
Actuated g/C Ratio	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Clearance Time (s)	3.0	3.0	3.0	3.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	3.0
Vehicle Extension (s)	177	254	254	204	204	2583						
Lane Grp Cap (vph)	0.03	0.21	0.28	0.29	0.09	0.33	0.33	0.33	0.33	0.33	0.33	0.33
v/s Ratio Prot	23.0	23.2	23.3	23.3	22.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
v/s Ratio Perm	0.89	0.88	1.00	1.00	1.00	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Uniform Delay, d1	0.6	0.6	0.6	0.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Progression Factor	21.1	21.1	21.1	21.1	23.5	22.7	22.7	22.7	22.7	22.7	22.7	22.7
Incremental Delay, d2	C	C	C	C	C	C	C	C	C	C	C	C
Delay (s)	21.1	21.1	21.1	21.1	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Level of Service	21.1	21.1	21.1	21.1	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Approach Delay (s)	C	C	C	C	C	C	C	C	C	C	C	C
Approach LOS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intersection Summary												
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service										
HCM 2000 Volume to Capacity ratio	0.32	A										
Actuated Cycle Length (s)	60.0	Sum of lost time (s)										
Intersection Capacity Utilization	48.7%	ICU Level of Service										
Analysis Period (min)	15	7.2										
c Critical Lane Group	A											

AC Hotel Traffic Impact Study  
PM Existing plus Project

W-Trans

HCM Unsignalized Intersection Capacity Analysis

5: Davis St & 4th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Traffic Volume (vph)	0	22	22	1	20	0	0	0	0	0	32	441
Future Volume (vph)	0	22	22	1	20	0	0	0	0	0	32	441
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	25	25	1	22	0	0	0	0	0	36	496
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total (vph)	50	23	284	257								
Volume Left (vph)	0	1	36	0								
Volume Right (vph)	25	0	0	9								
Head (s)	-0.27	0.04	0.10	0.01								
Departure Headway (s)	4.8	5.1	4.8	4.7								
Degree Utilization, x	0.07	0.03	0.38	0.34								
Capacity (veh/h)	699	649	741	754								
Control Delay (s)	8.1	8.3	9.5	8.9								
Approach Delay (s)	8.1	8.3	9.2									
Approach LOS	A	A	A	A								
Intersection Summary												
Delay	9.1											
Level of Service	A											
Intersection Capacity Utilization	27.3%		ICU Level of Service		A							
Analysis Period (min)	15											

AC Hotel Traffic Impact Study  
AM Existing plus Project

W-Trans

HCM Unsignalized Intersection Capacity Analysis

5: Davis St & 4th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Traffic Volume (vph)	0	32	51	47	32	0	0	0	0	0	29	506
Future Volume (vph)	0	32	51	47	32	0	0	0	0	0	29	506
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	34	55	51	34	0	0	0	0	0	31	544
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total (vph)	89	85	303	299								
Volume Left (vph)	0	51	31	0								
Volume Right (vph)	55	0	0	27								
Head (s)	-0.34	0.15	0.09	-0.03								
Departure Headway (s)	5.0	5.4	5.1	4.9								
Degree Utilization, x	0.12	0.13	0.43	0.41								
Capacity (veh/h)	675	616	699	714								
Control Delay (s)	8.7	9.3	10.5	10.1								
Approach Delay (s)	8.7	9.3	10.3									
Approach LOS	A	A	B									
Intersection Summary												
Delay	10.0											
Level of Service	B											
Intersection Capacity Utilization	33.3%		ICU Level of Service		A							
Analysis Period (min)	15											

AC Hotel Traffic Impact Study  
PM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
6. Morgan St & 4th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	0	0	0	0	39	684	0	0	0	0
Future Volume (vph)	20	0	0	0	0	0	39	684	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6											
Lane Util. Factor	1.00											
Fpb. ped/bikes	1.00											
Fllb. ped/bikes	0.97											
Frt	1.00											
Flt Protected	0.95											
Satd. Flow (prot)	1721											
Flt Permitted	1.00											
Satd. Flow (perm)	1811											
Peak-hour factor, PHF	0.90	0.92	0.90	0.92	0.92	0.92	0.90	0.90	0.92	0.92	0.90	0.90
Adj. Flow (vph)	22	0	0	0	0	0	43	760	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	22	0	0	0	0	0	803	0	0	0	0
Confl. Peds. (#/hr)	20											
Confl. Bikes (#/hr)	10											
Parking (#/hr)	5	NA										
Turn Type	Perm	NA	Perm									NA
Protected Phases	2											
Permitted Phases	2											
Actuated Green, G (s)	4.0											
Effective Green, g (s)	4.0											
Actuated g/C Ratio	0.07											
Clearance Time (s)	3.6											
Vehicle Extension (s)	3.0											
Lane Grp Cap. (vph)	120											
v/s Ratio Prot	0.01											
v/s Ratio Perm	0.18											
v/g Ratio	0.28											
Uniform Delay, d1	26.5											
Progression Factor	1.00											
Incremental Delay, d2	0.7											
Delay (s)	27.2											
Level of Service	C											
Approach Delay (s)	27.2											
Approach LOS	C											
<b>Intersection Summary</b>												
HCM 2000 Control Delay	2.7											
HCM 2000 Volume to Capacity ratio	0.27											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	30.9%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
AM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
6. Morgan St & 4th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	0	0	0	0	0	50	714	0	0	0	0
Future Volume (vph)	71	0	0	0	0	0	50	714	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6											
Lane Util. Factor	1.00											
Fpb. ped/bikes	1.00											
Fllb. ped/bikes	0.97											
Frt	1.00											
Flt Protected	0.95											
Satd. Flow (prot)	1721											
Flt Permitted	1.00											
Satd. Flow (perm)	1371											
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	0	0	0	0	0	54	776	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	77	0	0	0	0	0	830	0	0	0	0
Confl. Peds. (#/hr)	20											
Confl. Bikes (#/hr)	10											
Parking (#/hr)	5	NA										
Turn Type	Perm	NA	Perm									NA
Protected Phases	2											
Permitted Phases	2											
Actuated Green, G (s)	6.4											
Effective Green, g (s)	6.4											
Actuated g/C Ratio	0.11											
Clearance Time (s)	3.6											
Vehicle Extension (s)	3.0											
Lane Grp Cap. (vph)	146											
v/s Ratio Prot	0.06											
v/s Ratio Perm	0.53											
v/g Ratio	0.31											
Uniform Delay, d1	25.4											
Progression Factor	1.00											
Incremental Delay, d2	3.4											
Delay (s)	28.8											
Level of Service	C											
Approach Delay (s)	28.8											
Approach LOS	C											
<b>Intersection Summary</b>												
HCM 2000 Control Delay	4.6											
HCM 2000 Volume to Capacity ratio	0.33											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	32.0%											
Analysis Period (min)	15											
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
PM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
7: US 101 SB On/Davis St & 3rd St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4P	4P	1T1	1T1	4T					4P	4P	
Traffic Volume (vph)	0	713	139	213	391	0	0	0	0	268	113	52	
Future Volume (vph)	0	713	139	213	391	0	0	0	0	268	113	52	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.2	3.0	3.2							3.0	3.0		
Lane Util. Factor	0.95	0.97	0.95	0.97	0.95	0.91	0.91	0.91	0.91	0.91	0.91		
Frb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.98	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97	0.97	0.97		
Flt Protected	1.00	1.00	0.95	1.00	1.00	0.95	0.98	0.98	0.98	0.95	0.98		
Sat'd. Flow (prot)	3436	3433	3539	3433	3539	1610	3217	3217	3217	1610	3217		
Flt Permitted	1.00	0.95	1.00	0.95	1.00	0.95	0.98	0.98	0.98	0.95	0.98		
Sat'd. Flow (perm)	3436	3433	3539	3433	3539	1610	3217	3217	3217	1610	3217		
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Adj. Flow (vph)	0	820	160	245	449	0	0	0	0	308	130	60	
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	0	0	0	36	
Lane Group Flow (vph)	0	959	0	245	449	0	0	0	0	166	296	0	
Confl. Peds. (#/hr)		15										5	
Confl. Bikes (#/hr)		5										5	
Turn Type	NA	NA	Prot	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Protected Phases	2		1	6						Perm	4		
Permitted Phases											4		
Actuated Green, G (s)	27.4	8.9	39.3	27.4	39.3	14.5	14.5	14.5	14.5	14.5	14.5		
Effective Green, g (s)	27.4	8.9	39.3	27.4	39.3	14.5	14.5	14.5	14.5	14.5	14.5		
Actuated G/C Ratio	0.46	0.15	0.65	0.46	0.65	0.24	0.24	0.24	0.24	0.24	0.24		
Clearance Time (s)	3.2	3.0	3.2	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Vehicle Extension (s)	2.8	2.4	2.4	2.4	2.4	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Grp Cap (vph)	1569	509	2318	1569	2318	389	777	777	777	389	777		
v/s Ratio Prot	c0.28	c0.07	0.13	c0.28	0.13	c0.10	0.09	0.09	0.09	c0.10	0.09		
v/c Ratio	0.61	0.48	0.19	0.61	0.19	0.43	0.38	0.38	0.38	0.43	0.38		
Uniform Delay, d1	12.3	23.4	4.1	12.3	4.1	19.2	19.0	19.0	19.0	19.2	19.0		
Progression Factor	0.76	0.90	0.26	0.76	0.26	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.5	0.4	0.2	1.5	0.2	1.0	0.4	0.4	0.4	1.0	0.4		
Delay (s)	10.9	21.6	1.2	10.9	1.2	20.3	19.4	19.4	19.4	20.3	19.4		
Level of Service	B	C	A	B	A	C	B	B	B	C	B		
Approach Delay (s)	10.9	8.4	8.4	10.9	8.4	0.0	0.0	0.0	0.0	8.4	19.7		
Approach LOS	B	A	A	B	A	A	A	A	A	B	B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay	12.1											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	9.2
Intersection Capacity Utilization	50.6%											ICU Level of Service	A
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
AM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
7: US 101 SB On/Davis St & 3rd St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4P	4P	1T1	1T1	4T					4P	4P	
Traffic Volume (vph)	0	602	165	341	638	0	0	0	0	212	249	144	
Future Volume (vph)	0	602	165	341	638	0	0	0	0	212	249	144	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.2	3.0	3.2							3.0	3.0		
Lane Util. Factor	0.95	0.97	0.95	0.97	0.95	0.91	0.91	0.91	0.91	0.91	0.91		
Frb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.97	1.00	1.00	1.00	1.00	0.97	0.95	0.95	0.95	0.95	0.95		
Flt Protected	1.00	1.00	0.95	1.00	1.00	0.95	0.98	0.98	0.98	0.95	0.98		
Sat'd. Flow (prot)	3390	3433	3539	3433	3539	1610	3172	3172	3172	1610	3172		
Flt Permitted	1.00	0.95	1.00	0.95	1.00	0.95	0.98	0.98	0.98	0.95	0.98		
Sat'd. Flow (perm)	3390	3433	3539	3433	3539	1610	3172	3172	3172	1610	3172		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	0	640	176	363	679	0	0	0	0	226	265	153	
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	71	
Lane Group Flow (vph)	0	798	0	363	679	0	0	0	0	203	370	0	
Confl. Peds. (#/hr)		20										10	
Confl. Bikes (#/hr)		5										5	
Turn Type	NA	NA	Prot	NA	NA	NA	NA	NA	NA	Perm	NA	NA	
Protected Phases	2		1	6						Perm	4		
Permitted Phases											4		
Actuated Green, G (s)	53.9	15.2	72.1	53.9	72.1	21.7	21.7	21.7	21.7	21.7	21.7		
Effective Green, g (s)	53.9	15.2	72.1	53.9	72.1	21.7	21.7	21.7	21.7	21.7	21.7		
Actuated G/C Ratio	0.54	0.15	0.72	0.54	0.72	0.22	0.22	0.22	0.22	0.22	0.22		
Clearance Time (s)	3.2	3.0	3.2	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Vehicle Extension (s)	2.8	2.4	2.4	2.8	2.4	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Grp Cap (vph)	1827	521	2551	1827	2551	349	688	688	688	349	688		
v/s Ratio Prot	c0.24	c0.11	0.19	c0.24	0.19	c0.13	0.12	0.12	0.12	c0.13	0.12		
v/c Ratio	0.44	0.70	0.27	0.44	0.27	0.58	0.54	0.54	0.54	0.58	0.54		
Uniform Delay, d1	13.9	40.2	4.8	13.9	4.8	35.1	34.7	34.7	34.7	35.1	34.7		
Progression Factor	0.91	1.43	0.17	0.91	0.17	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.7	2.9	0.2	0.7	0.2	2.9	2.9	2.9	2.9	2.9	2.9		
Delay (s)	13.3	60.5	1.0	13.3	1.0	38.0	35.7	35.7	35.7	38.0	35.7		
Level of Service	B	E	A	B	A	D	D	D	D	D	D		
Approach Delay (s)	13.3	21.8	21.8	13.3	21.8	0.0	0.0	0.0	0.0	21.8	36.4		
Approach LOS	B	A	A	B	A	A	A	A	A	D	D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay	22.8											HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51												
Actuated Cycle Length (s)	100.0											Sum of lost time (s)	9.2
Intersection Capacity Utilization	56.1%											ICU Level of Service	B
Analysis Period (min)	15												
c. Critical Lane Group													

AC Hotel Traffic Impact Study  
PM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
8: US 101 NB Off/Morgan St & 3rd St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	258	716	0	548	267	54	182	206	0	0	0	0
Future Volume (vph)	258	716	0	548	267	54	182	206	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.88	0.88	0.88	0.88	0.88	0.88
Frb. ped/bikes	1.00	1.00	1.00	1.00	0.97	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	3539	1542	3499	2707	3499	2707	3499	2707	3499
Satd. Flow (prot)	1770	3539	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Flt Permitted	0.95	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	3539	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	293	814	0	623	303	61	207	234	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	211	0	0	193	0	0	0
Lane Group Flow (vph)	293	814	0	623	92	0	268	41	0	0	0	0
Confl. Peds. (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10
Confl. Bikes (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5

Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6	6	8	8	8
Permitted Phases							
Actuated Green, G (s)	21.7	43.0	18.3	18.3	10.6	10.6	10.6
Effective Green, g (s)	21.7	43.0	18.3	18.3	10.6	10.6	10.6
Actuated g/C Ratio	0.36	0.72	0.31	0.31	0.18	0.18	0.18
Clearance Time (s)	3.0	3.2	3.2	3.2	3.2	3.2	3.2
Vehicle Extension (s)	2.6	2.6	3.1	3.1	2.6	2.6	2.6
Lane Grp Cap (vph)	640	2536	1079	470	618	478	478
v/s Ratio Prot	c0.17	0.23	c0.18	0.06	0.08	0.02	0.02
v/s Ratio Perm	0.46	0.32	0.58	0.20	0.43	0.09	0.09
Uniform Delay, d1	14.6	3.1	17.6	15.4	22.0	20.7	20.7
Progression Factor	0.59	1.31	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.3	0.8	0.2	0.4	0.1	0.1
Delay (s)	10.6	4.4	18.4	15.6	22.4	20.7	20.7
Level of Service	B	A	B	B	C	C	C
Approach Delay (s)	6.0	6.0	17.5	17.5	21.6	21.6	21.6
Approach LOS	A	A	B	B	C	C	C

Intersection Summary	
HCM 2000 Control Delay	13.3
HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50
Actuated Cycle Length (s)	60.0
Sum of lost time (s)	9.4
Intersection Capacity Utilization	50.6%
ICU Level of Service	A
Analysis Period (min)	15
Critical Lane Group	

AC Hotel Traffic Impact Study  
AM Existing plus Project

W-Trans

HCM Signalized Intersection Capacity Analysis  
8: US 101 NB Off/Morgan St & 3rd St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	110	706	0	875	395	93	249	336	0	0	0	0
Future Volume (vph)	110	706	0	875	395	93	249	336	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.88	0.88	0.88	0.88	0.88	0.88
Frb. ped/bikes	1.00	1.00	1.00	1.00	0.97	1.00	0.96	0.96	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	3539	1532	3492	2687	3492	2687	3492	2687	3492
Satd. Flow (prot)	1770	3539	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Flt Permitted	0.95	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	3539	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	115	735	0	911	411	97	259	350	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	258	0	0	293	0	0	0
Lane Group Flow (vph)	115	735	0	911	153	0	356	57	0	0	0	0
Confl. Peds. (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10
Confl. Bikes (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5

Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6	6	8	8	8
Permitted Phases							
Actuated Green, G (s)	34.8	75.7	37.3	37.3	16.3	16.3	16.3
Effective Green, g (s)	34.8	75.7	37.3	37.3	16.3	16.3	16.3
Actuated g/C Ratio	0.35	0.76	0.37	0.37	0.16	0.16	0.16
Clearance Time (s)	3.6	3.6	3.6	3.6	4.4	4.4	4.4
Vehicle Extension (s)	2.6	2.6	3.1	3.1	2.6	2.6	2.6
Lane Grp Cap (vph)	615	2679	1320	571	569	437	437
v/s Ratio Prot	0.06	c0.21	c0.26	0.10	0.10	0.02	0.02
v/s Ratio Perm	0.19	0.27	0.69	0.27	0.63	0.13	0.13
Uniform Delay, d1	22.7	3.7	26.5	21.8	39.0	35.8	35.8
Progression Factor	1.07	0.61	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	1.6	0.3	1.9	0.1	0.1
Delay (s)	25.0	2.5	28.1	22.1	40.9	35.9	35.9
Level of Service	C	A	C	C	D	D	D
Approach Delay (s)	5.5	5.5	26.2	26.2	38.4	38.4	38.4
Approach LOS	A	A	C	C	D	D	D

Intersection Summary	
HCM 2000 Control Delay	23.1
HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52
Actuated Cycle Length (s)	100.0
Sum of lost time (s)	11.6
Intersection Capacity Utilization	56.1%
ICU Level of Service	B
Analysis Period (min)	15
Critical Lane Group	

AC Hotel Traffic Impact Study  
PM Existing plus Project

W-Trans



HCM Signalized Intersection Capacity Analysis

1: Davis St/US 101 SB Off & 6th St

11/08/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	0	70	11	196	59	0	0	0	158	459	42
Future Volume (vph)	0	70	11	196	59	0	0	0	158	459	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5			3.5					3.7		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.99	0.95
Frbp. ped/bikes	1.00	0.99	1.00	0.98	1.00	1.00	0.98	1.00	0.99	0.99	0.99
Fllb. ped/bikes	1.00	0.98	1.00	0.98	1.00	1.00	0.97	1.00	0.99	0.99	0.99
Frt	0.98	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.99	0.99	0.99
Flt Protected	1.00	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.99	0.99	0.99
Satd. Flow (prot)	1588	1588	1588	1538	1538	1538	1518	1518	3367	3367	3367
Flt Permitted	1.00	0.71	1.00	0.71	1.00	1.00	0.69	1.00	0.99	0.99	0.99
Satd. Flow (perm)	1588	1135	1588	1135	1588	1588	1082	1588	3367	3367	3367
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	0	86	14	242	73	0	0	0	195	567	52
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	92	0	315	0	0	0	0	0	806	0
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20
Confl. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	Perm	NA	NA
Protected Phases	2	6	6	6	6	6	6	6	6	6	4
Permitted Phases											4
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	26.3
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	26.3
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.7	3.7
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0
Lane Grp Cap. (vph)	701	501	501	501	501	501	501	501	1493	1493	1493
v/s Ratio Prot	0.06										
v/s Ratio Perm		0.28							0.24		
v/c Ratio	0.13	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.54	0.54	0.54
Uniform Delay, d1	9.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.4	12.4	12.4
Progression Factor	1.00	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00
Incremental Delay, d2	0.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	1.4	1.4	1.4
Delay (s)	10.3	27.2	27.2	27.2	27.2	27.2	27.2	27.2	13.8	13.8	13.8
Level of Service	B	C	C	C	C	C	C	C	B	B	B
Approach Delay (s)	10.3	27.2	27.2	27.2	27.2	27.2	27.2	27.2	13.8	13.8	13.8
Approach LOS	B	C	C	C	C	C	C	C	A	A	B

Intersection Summary	16.9	HCM 2000 Level of Service	B
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		
c. Critical Lane Group			

AC Hotel Traffic Impact Study  
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HCM Signalized Intersection Capacity Analysis

1: Davis St/US 101 SB Off & 6th St

11/08/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	0	90	25	363	83	0	0	0	142	429	54
Future Volume (vph)	0	90	25	363	83	0	0	0	142	429	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5			3.5					3.7		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.99	0.95
Frbp. ped/bikes	1.00	0.98	1.00	0.98	1.00	1.00	0.97	1.00	0.99	0.99	0.99
Fllb. ped/bikes	1.00	0.97	1.00	0.97	1.00	1.00	0.97	1.00	0.99	0.99	0.99
Frt	0.97	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.99	0.99	0.99
Flt Protected	1.00	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.99	0.99	0.99
Satd. Flow (prot)	1559	1559	1559	1518	1518	1518	1518	1518	3367	3367	3367
Flt Permitted	1.00	0.71	1.00	0.71	1.00	1.00	0.69	1.00	0.99	0.99	0.99
Satd. Flow (perm)	1559	1082	1559	1082	1559	1559	1082	1559	3367	3367	3367
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	95	26	382	87	0	0	0	149	452	57
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	106	0	469	0	0	0	0	0	646	0
Confl. Peds. (#/hr)	30	30	30	30	30	30	30	30	30	30	30
Confl. Bikes (#/hr)	30	30	30	30	30	30	30	30	30	30	30
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	Perm	NA	NA
Protected Phases	2	6	6	6	6	6	6	6	6	6	4
Permitted Phases											4
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	26.3
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.3	26.3	26.3
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.7	3.7
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0
Lane Grp Cap. (vph)	688	477	477	477	477	477	477	477	1475	1475	1475
v/s Ratio Prot	0.07										
v/s Ratio Perm		0.43							0.19		
v/c Ratio	0.15	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.44	0.44	0.44
Uniform Delay, d1	10.0	16.5	16.5	16.5	16.5	16.5	16.5	16.5	11.7	11.7	11.7
Progression Factor	1.00	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.00	1.00	1.00
Incremental Delay, d2	0.5	28.8	28.8	28.8	28.8	28.8	28.8	28.8	0.9	0.9	0.9
Delay (s)	10.5	57.4	57.4	57.4	57.4	57.4	57.4	57.4	12.7	12.7	12.7
Level of Service	B	E	E	E	E	E	E	E	B	B	B
Approach Delay (s)	10.5	57.4	57.4	57.4	57.4	57.4	57.4	57.4	12.7	12.7	12.7
Approach LOS	B	E	E	E	E	E	E	E	A	A	B

Intersection Summary	29.3	HCM 2000 Level of Service	C
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	7.2
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c. Critical Lane Group			

AC Hotel Traffic Impact Study  
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HCM Signalized Intersection Capacity Analysis  
 2. Morgan St/US 101 NB On & 6th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	57	128	0	0	234	130	29	924	141	0	0	0
Traffic Volume (vph)	57	128	0	0	234	130	29	924	141	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frb. ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1747	1863	1863	1863	1506	3443	3443	3443	3443	3443	3443	3443
Satd. Flow (prot)	0.52	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Permitted	950	1863	1863	1863	1506	3443	3443	3443	3443	3443	3443	3443
Satd. Flow (perm)	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Peak-hour factor, PHF	62	139	0	0	254	141	32	1004	153	0	0	0
Adj. Flow (vph)	0	0	0	0	0	0	0	0	15	0	0	0
RTOR Reduction (vph)	62	139	0	0	254	141	0	1174	0	0	0	0
Lane Group Flow (vph)	20	20	20	20	20	20	20	20	20	20	20	20
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Confl. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Parking (#/hr)												
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2	2	2	2	6	6	6	8	8	8	8	8
Permitted Phases	2	13.9	13.9	13.9	13.9	13.9	13.9	34.9	34.9	34.9	34.9	34.9
Actuated Green, G (s)	13.9	13.9	13.9	13.9	13.9	13.9	13.9	34.9	34.9	34.9	34.9	34.9
Effective Green, g (s)	0.28	0.32	0.59	0.41	0.59	0.41	0.59	0.59	0.59	0.59	0.59	0.59
Actuated G/C Ratio	0.67	1.31	20.5	19.5	8.0	8.0	8.0	0.73	0.73	0.73	0.73	0.73
Progression Factor	0.7	0.4	2.1	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Incremental Delay, d2	13.3	25.5	22.6	20.3	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Delay (s)	B	C	C	C	C	C	A	A	A	A	A	A
Level of Service	B	C	C	C	C	C	A	A	A	A	A	A
Approach Delay (s)	21.7	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8
Approach LOS	C	C	C	C	C	C	A	A	A	A	A	A
<b>Intersection Summary</b>												
HCM 2000 Control Delay	11.9											B
HCM 2000 Volume to Capacity ratio	0.59											B
Actuated Cycle Length (s)	60.0											11.2
Intersection Capacity Utilization	63.3%											B
Analysis Period (min)	15											B
c. Critical Lane Group												

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HCM Signalized Intersection Capacity Analysis  
 2. Morgan St/US 101 NB On & 6th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	52	87	0	0	451	152	30	938	92	0	0	0
Traffic Volume (vph)	52	87	0	0	451	152	30	938	92	0	0	0
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frb. ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1750	1863	1863	1863	1499	3466	3466	3466	3466	3466	3466	3466
Satd. Flow (prot)	0.24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Permitted	443	1863	1863	1863	1499	3466	3466	3466	3466	3466	3466	3466
Satd. Flow (perm)	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Peak-hour factor, PHF	56	94	0	0	485	163	32	1009	99	0	0	0
Adj. Flow (vph)	0	0	0	0	0	0	0	12	0	0	0	0
RTOR Reduction (vph)	56	94	0	0	485	163	0	1128	0	0	0	0
Lane Group Flow (vph)	30	30	30	30	30	30	30	30	30	30	30	30
Confl. Peds. (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Confl. Bikes (#/hr)	20	20	20	20	20	20	20	20	20	20	20	20
Parking (#/hr)												
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	NA
Protected Phases	2	2	2	2	6	6	6	8	8	8	8	8
Permitted Phases	2	18.9	18.9	18.9	18.9	18.9	18.9	29.9	29.9	29.9	29.9	29.9
Actuated Green, G (s)	18.9	18.9	18.9	18.9	18.9	18.9	18.9	29.9	29.9	29.9	29.9	29.9
Effective Green, g (s)	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.50	0.50	0.50	0.50	0.50
Actuated G/C Ratio	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	139	586	586	586	472	1727	1727	1727	1727	1727	1727	1727
Lane Grp Cap (vph)	0.13	0.05	0.05	0.05	c0.26	0.11	0.11	0.33	0.33	0.33	0.33	0.33
v/s Ratio Prot	0.40	0.16	0.16	0.16	0.83	0.35	0.35	0.65	0.65	0.65	0.65	0.65
v/s Ratio Perm	16.1	14.8	14.8	14.8	19.0	15.8	11.2	11.2	11.2	11.2	11.2	11.2
Uniform Delay, d1	0.78	1.46	1.46	1.46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	2.1	0.1	0.1	0.1	9.4	0.4	1.8	1.8	1.8	1.8	1.8	1.8
Incremental Delay, d2	14.4	21.8	21.8	21.8	28.4	16.2	13.0	13.0	13.0	13.0	13.0	13.0
Delay (s)	B	C	C	C	C	B	B	B	B	B	B	B
Level of Service	B	C	C	C	C	B	B	B	B	B	B	B
Approach Delay (s)	19.0	19.0	19.0	19.0	25.3	13.0	13.0	13.0	13.0	13.0	13.0	13.0
Approach LOS	B	B	B	B	C	B	B	B	B	B	B	A
<b>Intersection Summary</b>												
HCM 2000 Control Delay	17.6											B
HCM 2000 Volume to Capacity ratio	0.72											B
Actuated Cycle Length (s)	60.0											11.2
Intersection Capacity Utilization	71.9%											C
Analysis Period (min)	15											C
c. Critical Lane Group												

AC Hotel Traffic Impact Study  
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HCM Signalized Intersection Capacity Analysis  
 4: Morgan St & 5th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←	
Traffic Volume (vph)	62	18	0	0	0	8	36	97	994	3	0	0	
Future Volume (vph)	62	18	0	0	0	8	36	97	994	3	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.6	3.6				3.6	3.6	3.6					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95					
Frb. ped/bikes	1.00	1.00				1.00	0.96	1.00					
Flpb. ped/bikes	0.99	1.00				1.00	1.00	1.00					
Frt	1.00	1.00				1.00	0.85	1.00					
Flt Protected	0.95	1.00				1.00	1.00	1.00					
Satd. Flow (prot)	1743	1863				1863	1512	3517					
Flt Permitted	0.75	1.00				1.00	1.00	1.00					
Satd. Flow (perm)	1380	1863				1863	1512	3517					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	67	20	0	0	0	9	39	105	1080	3	0	0	
RTOR Reduction (vph)	0	0	0	0	0	34	0	0	0	0	0	0	
Lane Group Flow (vph)	67	20	0	0	0	9	5	0	1188	0	0	0	
Confl. Peds. (#/hr)	15					15	15	15					
Confl. Bikes (#/hr)						10							
Turn Type	Perm	NA	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	
Protected Phases	2					6		8					
Permitted Phases	2					6		8					
Actuated Green, G (s)	7.2	7.2				7.2	7.2	45.6					
Effective Green, g (s)	7.2	7.2				7.2	7.2	45.6					
Actuated g/C Ratio	0.12	0.12				0.12	0.12	0.76					
Clearance Time (s)	3.6	3.6				3.6	3.6	3.6					
Vehicle Extension (s)	3.0	3.0				2.0	2.0	3.0					
Lane Grp Cap (vph)	165	223				223	181	2672					
v/s Ratio Prot	0.01					0.00		0.34					
v/s Ratio Perm	0.05					0.00		0.44					
v/c Ratio	0.41	0.09				0.04	0.03	0.44					
Uniform Delay, d1	24.4	23.5				23.3	23.3	2.6					
Progression Factor	1.27	1.30				1.00	1.00	0.81					
Incremental Delay, d2	1.5	0.2				0.0	0.0	0.5					
Delay (s)	32.5	30.7				23.4	23.3	2.6					
Level of Service	C	C				C	C	A					
Approach Delay (s)	32.1					23.3		2.6				0.0	
Approach LOS	C					C		A				A	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	5.3											HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	7.2
Intersection Capacity Utilization	53.0%											ICU Level of Service	A
Analysis Period (min)	15												
c Critical Lane Group													

AC Hotel Traffic Impact Study  
 AM Future plus Project

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HCM Signalized Intersection Capacity Analysis  
 4: Morgan St & 5th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←	
Traffic Volume (vph)	184	72	0	0	0	77	141	76	756	53	0	0	
Future Volume (vph)	184	72	0	0	0	77	141	76	756	53	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	3.6	3.6				3.6	3.6	3.6					
Lane Util. Factor	1.00	1.00				1.00	1.00	1.00	0.95				
Frb. ped/bikes	1.00	1.00				1.00	0.95	1.00					
Flpb. ped/bikes	0.98	1.00				1.00	1.00	1.00					
Frt	1.00	1.00				1.00	0.85	0.99					
Flt Protected	0.95	1.00				1.00	1.00	1.00					
Satd. Flow (prot)	1738	1863				1863	1512	3475					
Flt Permitted	0.70	1.00				1.00	1.00	1.00					
Satd. Flow (perm)	1285	1863				1863	1512	3475					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	200	78	0	0	0	84	153	83	822	58	0	0	
RTOR Reduction (vph)	0	0	0	0	0	115	0	6	0	0	0	0	
Lane Group Flow (vph)	200	78	0	0	0	84	38	0	957	0	0	0	
Confl. Peds. (#/hr)	20					20	20	20					
Confl. Bikes (#/hr)						15							
Turn Type	Perm	NA	NA	NA	NA	Perm	Perm	NA	NA	NA	NA	NA	
Protected Phases	2					6		8					
Permitted Phases	2					6		8					
Actuated Green, G (s)	14.2	14.2				14.2	14.2	38.6					
Effective Green, g (s)	14.2	14.2				14.2	14.2	38.6					
Actuated g/C Ratio	0.24	0.24				0.24	0.24	0.64					
Clearance Time (s)	3.6	3.6				3.6	3.6	3.6					
Vehicle Extension (s)	3.0	3.0				2.0	2.0	3.0					
Lane Grp Cap (vph)	304	440				440	357	2235					
v/s Ratio Prot	0.04					0.05		0.28					
v/s Ratio Perm	0.16					0.06		0.43					
v/c Ratio	0.66	0.18				0.19	0.11	0.43					
Uniform Delay, d1	20.7	18.2				18.3	17.9	5.3					
Progression Factor	1.09	1.12				1.00	1.00	0.67					
Incremental Delay, d2	5.0	0.2				0.1	0.0	0.6					
Delay (s)	27.6	20.6				18.4	18.0	4.1					
Level of Service	C	C				B	B	A					
Approach Delay (s)	25.6					18.1		4.1				0.0	
Approach LOS	C					B		A				A	
<b>Intersection Summary</b>													
HCM 2000 Control Delay	10.4											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49												
Actuated Cycle Length (s)	60.0											Sum of lost time (s)	7.2
Intersection Capacity Utilization	57.9%											ICU Level of Service	B
Analysis Period (min)	15												
c Critical Lane Group													

AC Hotel Traffic Impact Study  
 PM Future plus Project

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HCM Unsignalized Intersection Capacity Analysis

5: Davis St & 4th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Traffic Volume (vph)	0	76	106	1	23	0	0	0	0	0	35	893
Future Volume (vph)	0	76	106	1	23	0	0	0	0	0	35	893
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	85	119	1	26	0	0	0	0	0	39	1003
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total (vph)	204	27	541	512								
Volume Left (vph)	0	1	39	0								
Volume Right (vph)	119	0	0	10								
HadJ (s)	-0.32	0.04	0.07	0.02								
Departure Headway (s)	5.4	6.1	5.2	5.2								
Degree Utilization, x	0.31	0.05	0.79	0.74								
Capacity (veh/h)	642	563	677	681								
Control Delay (s)	10.8	9.4	23.5	20.1								
Approach Delay (s)	10.8	9.4	21.8									
Approach LOS	B	A	C									
Intersection Summary												
Delay	19.8											
Level of Service	C											
Intersection Capacity Utilization	44.8%											
ICU Level of Service	A											
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

5: Davis St & 4th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Traffic Volume (vph)	0	36	100	53	205	0	0	0	0	0	31	907
Future Volume (vph)	0	36	100	53	205	0	0	0	0	0	31	907
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	39	108	57	220	0	0	0	0	0	33	975
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total (vph)	147	277	521	531								
Volume Left (vph)	0	57	33	0								
Volume Right (vph)	108	0	0	43								
HadJ (s)	-0.41	0.08	0.07	-0.02								
Departure Headway (s)	6.0	6.2	5.9	5.8								
Degree Utilization, x	0.24	0.47	0.85	0.85								
Capacity (veh/h)	589	570	606	616								
Control Delay (s)	10.9	14.6	32.0	32.0								
Approach Delay (s)	10.9	14.6	32.0									
Approach LOS	B	B	D									
Intersection Summary												
Delay	26.6											
Level of Service	D											
Intersection Capacity Utilization	62.4%											
ICU Level of Service	B											
Analysis Period (min)	15											

HCM Signalized Intersection Capacity Analysis

6: Morgan St & 4th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		←	←	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	74	0	0	0	0	0	73	1024	0	0	0	0
Future Volume (vph)	74	0	0	0	0	0	73	1024	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6											
Lane Util. Factor	1.00											
Fpb. ped/bikes	1.00											
Flpb. ped/bikes	0.97											
Frt	1.00											
Flt Protected	0.95											
Satd. Flow (prot)	1721											
Flt Permitted	0.76											
Satd. Flow (perm)	1371											
Peak-hour factor, PHF	0.90	0.92	0.90	0.92	0.92	0.92	0.90	0.90	0.92	0.92	0.90	0.90
Adj. Flow (vph)	82	0	0	0	0	0	81	1138	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	82	0	0	0	0	0	1219	0	0	0	0
Confl. Peds. (#/hr)	20											
Confl. Bikes (#/hr)	10											
Parking (#/hr)	5											
Turn Type	Perm	NA					Perm	NA				
Protected Phases	2											
Permitted Phases	2											
Actuated Green, G (s)	7.9											
Effective Green, g (s)	7.9											
Actuated g/C Ratio	0.13											
Clearance Time (s)	3.6											
Vehicle Extension (s)	3.0											
Lane Grp Cap. (vph)	180											
v/s Ratio Prot	c0.06											
v/s Ratio Perm	0.46											
v/g Ratio	2.9											
Uniform Delay, d1	24.1											
Progression Factor	1.00											
Incremental Delay, d2	1.8											
Delay (s)	25.9											
Level of Service	C											
Approach Delay (s)	25.9											
Approach LOS	C											
<b>Intersection Summary</b>												
HCM 2000 Control Delay	4.9											
HCM 2000 Volume to Capacity ratio	0.46											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	41.3%											
Analysis Period (min)	15											
c. Critical Lane Group	A											

AC Hotel Traffic Impact Study  
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HCM Signalized Intersection Capacity Analysis

6: Morgan St & 4th St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		←	←	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	78	0	0	0	0	0	222	801	0	0	0	0
Future Volume (vph)	78	0	0	0	0	0	222	801	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6											
Lane Util. Factor	1.00											
Fpb. ped/bikes	1.00											
Flpb. ped/bikes	0.97											
Frt	1.00											
Flt Protected	0.95											
Satd. Flow (prot)	1721											
Flt Permitted	0.76											
Satd. Flow (perm)	1371											
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	0	0	0	0	0	241	871	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	85	0	0	0	0	0	1112	0	0	0	0
Confl. Peds. (#/hr)	20											
Confl. Bikes (#/hr)	10											
Parking (#/hr)	5											
Turn Type	Perm	NA					Perm	NA				
Protected Phases	2											
Permitted Phases	2											
Actuated Green, G (s)	8.0											
Effective Green, g (s)	8.0											
Actuated g/C Ratio	0.13											
Clearance Time (s)	3.6											
Vehicle Extension (s)	3.0											
Lane Grp Cap. (vph)	182											
v/s Ratio Prot	c0.06											
v/s Ratio Perm	0.47											
v/g Ratio	2.8											
Uniform Delay, d1	24.0											
Progression Factor	1.00											
Incremental Delay, d2	1.9											
Delay (s)	25.9											
Level of Service	C											
Approach Delay (s)	25.9											
Approach LOS	C											
<b>Intersection Summary</b>												
HCM 2000 Control Delay	5.0											
HCM 2000 Volume to Capacity ratio	0.44											
Actuated Cycle Length (s)	60.0											
Intersection Capacity Utilization	39.6%											
Analysis Period (min)	15											
c. Critical Lane Group	A											

AC Hotel Traffic Impact Study  
PM Future plus Project

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HCM Signalized Intersection Capacity Analysis  
7: US 101 SB On/Davis St & 3rd St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4P	4P	4P	4P	4P						
Traffic Volume (vph)	0	859	243	264	442	0	0	0	0	552	325	131
Future Volume (vph)	0	859	243	264	442	0	0	0	0	552	325	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.0	3.2	3.0	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.97	0.97	0.95	0.97	0.95	0.91	0.91	0.91	0.91	0.91	0.91
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.98	1.00	0.95	0.98	1.00
Fill Protected	3400	3433	3539	3433	3539	3433	1610	3227	1610	3227	3433	3539
Satd. Flow (prot)	1.00	0.95	1.00	0.95	1.00	0.95	0.95	0.98	1.00	0.95	0.98	1.00
Fill Permitted	3400	3433	3539	3433	3539	3433	1610	3227	1610	3227	3433	3539
Satd. Flow (perm)	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Peak-hour factor, PHF	0.987	0.279	0.303	0.508	0	0	0	0	0	0.634	0.374	0.151
Adj. Flow (vph)	0	41	0	0	0	0	0	0	0	0	0	34
RTOR Reduction (vph)	0	1225	0	303	508	0	0	0	0	387	738	0
Lane Group Flow (vph)	15	15	15	15	15	15	15	15	15	15	15	15
Confl. Peds. (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Confl. Bikes (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Turn Type	NA	NA	Prot	NA	NA	Prot	NA	NA	NA	NA	NA	NA
Protected Phases	2	1	6	1	6	1	6	1	6	1	6	1
Permitted Phases	4	4	4	4	4	4	4	4	4	4	4	4
Actuated Green, G (s)	20.2	9.6	32.8	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Effective Green, g (s)	20.2	9.6	32.8	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Actuated g/C Ratio	0.34	0.16	0.55	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Clearance Time (s)	3.2	3.0	3.2	3.0	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)	2.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Lane Grp Cap (vph)	1144	549	1934	563	1129	563	1129	563	1129	563	1129	563
v/s Ratio Prot	c0.36	c0.09	0.14	c0.24	0.23	c0.24	0.23	c0.24	0.23	c0.24	0.23	c0.24
v/c Ratio	1.07	0.55	0.26	0.69	0.65	0.69	0.65	0.69	0.65	0.69	0.65	0.69
Uniform Delay, d1	19.9	23.2	7.2	16.7	16.4	16.7	16.4	16.7	16.4	16.7	16.4	16.4
Progression Factor	0.95	0.84	0.36	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.9	0.8	0.3	3.8	1.5	3.8	1.5	3.8	1.5	3.8	1.5	3.8
Delay (s)	65.9	20.3	2.8	20.5	18.0	20.5	18.0	20.5	18.0	20.5	18.0	20.5
Level of Service	E	C	A	C	B	C	B	C	B	C	B	C
Approach Delay (s)	65.9	9.4	9.4	0.0	18.8	0.0	18.8	0.0	18.8	0.0	18.8	0.0
Approach LOS	E	A	A	A	B	A	B	A	B	A	B	A
Intersection Summary												
HCM 2000 Control Delay	34.8											
HCM 2000 Level of Service	C											
HCM 2000 Volume to Capacity ratio	0.81											
Actuated Cycle Length (s)	60.0											
Sum of lost time (s)	9.2											
Intersection Capacity Utilization	90.0%											
ICU Level of Service	E											
Analysis Period (min)	15											
Critical Lane Group	c											

AC Hotel Traffic Impact Study  
AM Future plus Project

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HCM Signalized Intersection Capacity Analysis  
7: US 101 SB On/Davis St & 3rd St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4P	4P	4P	4P	4P						
Traffic Volume (vph)	0	692	247	467	787	0	0	0	0	269	506	283
Future Volume (vph)	0	692	247	467	787	0	0	0	0	269	506	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.0	3.2	3.0	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.97	0.97	0.95	0.97	0.95	0.91	0.91	0.91	0.91	0.91	0.91
Frbp. ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Fill Protected	3400	3433	3539	3433	3539	3433	1610	3177	1610	3177	3433	3539
Satd. Flow (prot)	1.00	0.95	1.00	0.95	1.00	0.95	0.95	0.98	1.00	0.95	0.98	1.00
Fill Permitted	3400	3433	3539	3433	3539	3433	1610	3177	1610	3177	3433	3539
Satd. Flow (perm)	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Peak-hour factor, PHF	0.94	0.736	0.263	0.497	0.837	0	0	0	0	0.286	0.538	0.301
Adj. Flow (vph)	0	35	0	0	0	0	0	0	0	0	0	62
RTOR Reduction (vph)	0	964	0	497	837	0	0	0	0	257	806	0
Lane Group Flow (vph)	20	20	20	20	20	20	20	20	20	20	20	20
Confl. Peds. (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Confl. Bikes (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Turn Type	NA	NA	Prot	NA	NA	Prot	NA	NA	NA	NA	NA	NA
Protected Phases	2	1	6	1	6	1	6	1	6	1	6	1
Permitted Phases	4	4	4	4	4	4	4	4	4	4	4	4
Actuated Green, G (s)	40.4	18.5	61.9	18.5	61.9	18.5	61.9	18.5	61.9	18.5	61.9	18.5
Effective Green, g (s)	40.4	18.5	61.9	18.5	61.9	18.5	61.9	18.5	61.9	18.5	61.9	18.5
Actuated g/C Ratio	0.40	0.18	0.62	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
Clearance Time (s)	3.2	3.0	3.2	3.0	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)	2.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Lane Grp Cap (vph)	1356	635	2190	513	1013	513	1013	513	1013	513	1013	513
v/s Ratio Prot	c0.29	c0.14	0.24	c0.16	0.25	c0.16	0.25	c0.16	0.25	c0.16	0.25	c0.16
v/c Ratio	0.71	0.78	0.38	0.50	0.80	0.50	0.80	0.50	0.80	0.50	0.80	0.50
Uniform Delay, d1	24.9	38.8	9.5	27.6	31.1	27.6	31.1	27.6	31.1	27.6	31.1	27.6
Progression Factor	1.25	1.61	0.32	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	4.6	0.4	1.1	4.7	1.1	4.7	1.1	4.7	1.1	4.7	1.1
Delay (s)	34.0	67.2	3.4	28.7	35.7	28.7	35.7	28.7	35.7	28.7	35.7	28.7
Level of Service	C	E	A	C	D	C	D	C	D	C	D	C
Approach Delay (s)	34.0	27.2	0.0	0.0	34.1	0.0	34.1	0.0	34.1	0.0	34.1	0.0
Approach LOS	C	C	A	A	C	A	C	A	C	A	C	A
Intersection Summary												
HCM 2000 Control Delay	31.4											
HCM 2000 Level of Service	C											
HCM 2000 Volume to Capacity ratio	0.76											
Actuated Cycle Length (s)	100.0											
Sum of lost time (s)	9.2											
Intersection Capacity Utilization	71.7%											
ICU Level of Service	C											
Analysis Period (min)	15											
Critical Lane Group	c											

AC Hotel Traffic Impact Study  
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HCM Signalized Intersection Capacity Analysis  
8: US 101 NB Off/Morgan St & 3rd St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	328	1077	0	0	614	376	93	406	329	0	0	0
Future Volume (vph)	328	1077	0	0	614	376	93	406	329	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.88	0.88	0.88	1.00	0.97	0.88
Frb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Satd. Flow (prot)	1770	3539	3539	1542	3506	2713	3506	2713	3506	2713	3506	2713
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Satd. Flow (perm)	1770	3539	3539	1542	3506	2713	3506	2713	3506	2713	3506	2713
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	373	1224	0	0	698	427	106	461	374	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	373	1224	0	0	698	339	0	567	297	0	0	0
Confl. Peds. (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10
Confl. Bikes (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Turn Type	Prot	NA	NA	NA	NA	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5	2				6				8		
Permitted Phases						6				8		
Actuated Green, G (s)	15.3	37.4			19.1	19.1	16.2	16.2	16.2			8
Effective Green, g (s)	15.3	37.4			19.1	19.1	16.2	16.2	16.2			8
Actuated g/C Ratio	0.26	0.62			0.32	0.32	0.27	0.27	0.27			0.24
Clearance Time (s)	3.0	3.2			3.2	3.2	3.2	3.2	3.2			4.4
Vehicle Extension (s)	2.6	2.6			3.1	3.1	2.6	2.6	2.6			2.6
Lane Grp Cap (vph)	451	2205			1126	490	946	732	732			646
v/s Ratio Prot	c0.21	0.35			0.20							0.32
v/s Ratio Perm	0.83	0.56			0.62	0.69	0.60	0.41	0.11			0.11
Uniform Delay, d1	21.1	6.5			17.4	17.9	19.1	18.0	18.0			0.78
Progression Factor	0.95	1.51			1.00	1.00	1.00	1.00	1.00			0.33
Incremental Delay, d2	1.7	0.5			1.0	4.2	0.9	0.3	0.3			31.4
Delay (s)	21.8	10.3			18.4	22.1	20.0	18.2	18.2			4.5
Level of Service	C	B			B	C	B	B	B			C
Approach Delay (s)	13.0				19.8		19.3					0.0
Approach LOS	B				B		B					A
<b>Intersection Summary</b>												
HCM 2000 Control Delay	16.7 HCM 2000 Level of Service B											
HCM 2000 Volume to Capacity ratio	0.70											
Actuated Cycle Length (s)	60.0 Sum of lost time (s) 9.4											
Intersection Capacity Utilization	90.0% ICU Level of Service E											
Analysis Period (min)	15											
c Critical Lane Group												

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HCM Signalized Intersection Capacity Analysis  
8: US 101 NB Off/Morgan St & 3rd St

11/08/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	156	838	0	0	1085	535	134	493	455	0	0	0
Future Volume (vph)	156	838	0	0	1085	535	134	493	455	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.88	0.88	0.88	1.00	0.97	0.88
Frb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fllb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Satd. Flow (prot)	1770	3539	3539	1533	3502	2693	3502	2693	3502	2693	3502	2693
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Satd. Flow (perm)	1770	3539	3539	1533	3502	2693	3502	2693	3502	2693	3502	2693
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	162	873	0	0	1130	557	140	514	474	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	163	873	0	0	1130	397	0	654	213	0	0	0
Confl. Peds. (#/hr)	10	10	10	10	10	10	10	10	10	10	10	10
Confl. Bikes (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Turn Type	Prot	NA	NA	NA	NA	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5	2				6				8		
Permitted Phases						6				8		
Actuated Green, G (s)	21.1	68.0			43.3	43.3	24.0	24.0	24.0			8
Effective Green, g (s)	21.1	68.0			43.3	43.3	24.0	24.0	24.0			8
Actuated g/C Ratio	0.21	0.68			0.43	0.43	0.24	0.24	0.24			0.24
Clearance Time (s)	3.6	3.6			3.6	3.6	3.6	3.6	3.6			4.4
Vehicle Extension (s)	2.6	2.6			3.1	3.1	2.6	2.6	2.6			2.6
Lane Grp Cap (vph)	373	2406			1532	663	840	646	646			646
v/s Ratio Prot	c0.09	0.25			c0.32							0.32
v/s Ratio Perm	0.44	0.36			0.74	0.60	0.78	0.33	0.19			0.08
Uniform Delay, d1	34.3	6.8			23.6	21.7	35.5	31.4	31.4			0.78
Progression Factor	0.71	0.48			1.00	1.00	1.00	1.00	1.00			0.33
Incremental Delay, d2	2.7	0.3			1.9	1.5	4.5	0.2	0.2			31.4
Delay (s)	26.9	3.6			25.5	23.2	40.0	31.6	31.6			4.5
Level of Service	C	A			C	C	D	C	C			C
Approach Delay (s)	7.2				24.7		36.5					0.0
Approach LOS	A				C		D					A
<b>Intersection Summary</b>												
HCM 2000 Control Delay	23.5 HCM 2000 Level of Service C											
HCM 2000 Volume to Capacity ratio	0.68											
Actuated Cycle Length (s)	100.0 Sum of lost time (s) 11.6											
Intersection Capacity Utilization	71.7% ICU Level of Service C											
Analysis Period (min)	15											
c Critical Lane Group												

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