Sacramento Intermodal Transportation Facility

Final Traffic and Transportation/Pedestrian and Bicycle Facilities Technical Report

Sacramento, California

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Traffic and Transportation/Pedestrian and Bicycle Facilities

Introduction

This report summarizes the effects on the transportation and circulation system resulting from vehicle trips associated with the Sacramento Intermodal Transportation Facility project (project). The transportation and circulation analysis is focused on Phase 2 of the project. Phase 1 would involve realignment of existing mainline rail tracks and would not result in changes to site vehicular access or result in development that would generate new trips. Phase 3 has been addressed in the Railyards Specific Plan (RSP) environmental impact report (EIR) for Long Term (2030) full Railyards project conditions. Phase 2 development will result in reconfiguration of site access and the addition of new parking spaces that is expected to generate new trips on the surrounding transportation system.

A quantitative analysis of weekday a.m. and p.m. commuter hour conditions were conducted for Phase 2 for the following conditions:

- existing,
- baseline, and
- baseline with Phase 2.

The transportation discussion, prepared by Dowling Associates, Inc., addresses impacts of all conditions identified in the analysis.

Project Description

The project would realign existing mainline rail tracks in Phase 1, improve the existing Sacramento Valley Station (Station) in Phase 2, and transform the station into a multimodal transportation center in Phase 3. The project area is located within the Central Business District of the downtown area of the city of Sacramento and within the RSP area. The project site is generally bounded by I Street on the south, 2nd Street and the Sacramento riverfront on the west, 7th Street on the east, and the Central Shops buildings on the north.

The Phase 1 realignment of the existing mainline tracks would require construction on site to accommodate pedestrian and service vehicle access. A pedestrian walkway from the passenger platform tunnel to the Depot on the south side of the rail corridor would be constructed along with a pedestrian ramp and staircase from the passenger platform tunnel to the north side of the rail corridor. A service access pathway would be constructed from the Depot to the proposed new passenger tracks, consisting of an at-grade crossing of the tracks on the west side of the platforms, the service roadway between the new platforms, and the paved drive between the Depot and the at-grade crossing. The ramps to the platform that are part of the existing

pedestrian tunnel at the Depot would be subsequently connected to the new at-grade walkway. No changes in access to the site are proposed as part of Phase 1.

Phase 2 would relocate the existing light rail transit (LRT) station to the north and improve internal site circulation and proximity to relocated bus berths and to the long-distance passenger rail service from LRT trains. The existing Regional Transit (RT) and Amtrak bus berths would be moved to a location west of the relocated LRT station to improve passenger access from the passenger rail platforms, the at-grade walkway, and the LRT station. A new bus-only access would be provided from 7th Street as an extension of F Street. On-site parking would be reconfigured and expanded from approximately 477 parking spaces to 630 spaces and the parking area in front of the Depot would be modified to improve the drop-off area. Auto access to the site would be provided at the existing transit-only access at the intersection of 5th Street and H Street. A related project at the intersection of 4th Street and I Street would provide pedestrian access and auto egress from the site.

Phase 3 would convert the existing Station into a large, multimodal regional transportation facility designed to integrate a classic transportation building and the historic Sacramento setting with expanded bus bays and other features to serve passengers and providers. Administrative operations and office areas would be provided and a joint development space would provide approximately 22,800 square feet of commercial development. On-site parking structures would be constructed to meet future needs for additional parking. A new access is proposed as an extension of 3rd Street across I Street on the south boundary of the project site. Phase 3 is essentially as described in the RSP EIR.

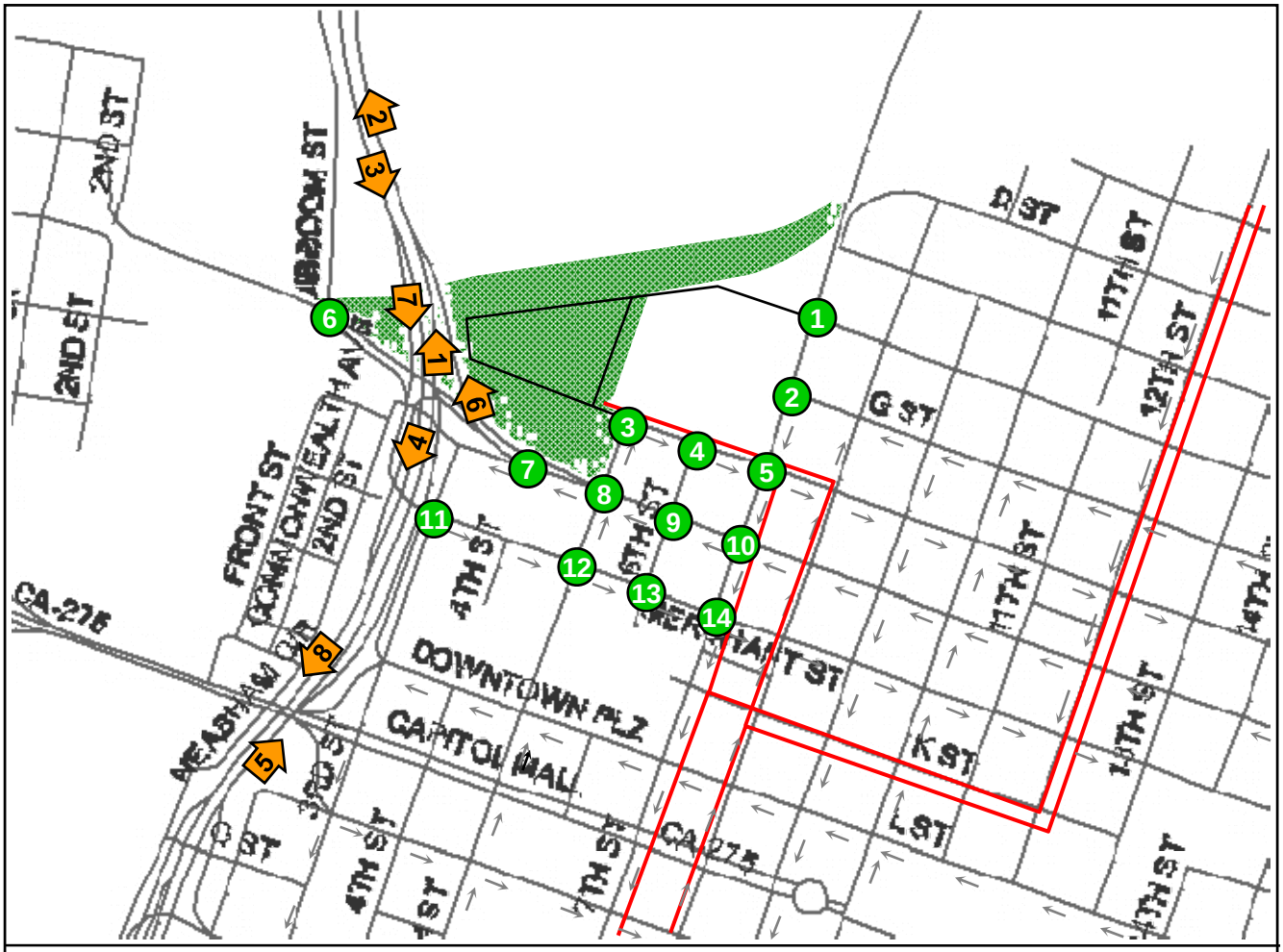
Environmental Setting

The existing and planned roadway, transit, bicycle and pedestrian components of the transportation system within the study area are described below. A map of the vicinity and existing transportation system is provided in Figure 1.

Existing Transportation System

Regional vehicular access to the project area is provided primarily by the freeway system that serves the central areas of Sacramento. Interstate 5 (I-5) is a north-south facility located just west of the project site. Access from I-5 is provided primarily via J Street and access to I-5 is provided primarily via I Street. To the south, I-5 provides access to southern portions of the city and county, as well as other Central Valley communities. To the north, I-5 provides access to I-80, northern portions of the city and county, Sacramento International Airport, and other Central Valley communities.

Downtown Sacramento is served by a grid street system. North-south streets have numbered street names and east-west streets have lettered street names. Many streets operate as one-way facilities and most major intersections in downtown are signal-controlled. In general, the one-way streets carry three travel lanes, with parking permitted along both curbs. Two-way streets generally have one lane in each direction with parking on both sides of the street. To



KEY

10 = Existing study intersection

1 = Freeway study location

= Project Site

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Figure 1
ROADWAY NETWORK
EXISTING CONDITIONS

accommodate critical traffic volumes and turning movements in selected locations, parking has been prohibited to provide additional lanes.

Primary downtown east-west streets for project area access include H and J Streets, which are one-way eastbound, and G and I Streets, which are one-way westbound. I Street provides a link across the American River via the I Street Bridge to West Sacramento.

Key downtown north-south streets for project area access include 3rd and 7th Streets, which are one-way southbound (except for a portion of 3rd street between L and J Street and 7th Street north of F Street), and 5th Street, which is one-way northbound (except for a portion of between J and L Streets).

Existing Transit System

The existing Amtrak depot is located on the southernmost portion of the project site and provides regional train service. Amtrak operates daily scheduled passenger train service from the downtown station to Richmond-Bay Area Rapid Transit-Oakland-San Francisco-San Jose, the San Joaquin Valley, Los Angeles, and Portland-Seattle. Reno-Denver-Chicago service is also available. Connections can be made to locations throughout the United States and Canada.

The Sacramento RT District is the major transit provider within Sacramento County, providing light rail service and fixed-route bus service on more than 70 routes. Light rail service and many of the bus routes are oriented to the downtown area. Current light rail service extends from the downtown area to the Watt/I-80 station to the northeast, to the Folsom Station to the east, and to Meadowview Station to the south, and light rail lines along 7th and 8th Street connect to the existing depot.

Transit schedules are synchronized to provide "timed transfers" between bus routes and light rail at several stations. Many suburban stations include park-and-ride facilities. Light rail operates at 15-minute headways daily and on weekends, and at 30-minute headways during the evening. In addition to light rail service, many bus routes serve the downtown area including the Amtrak depot. Currently, Route 11 serves the project site directly along 7th Street and provides connection between Natomas and downtown Sacramento.

A number of other transit services connect downtown Sacramento with neighboring communities, providing primarily peak period services designed to accommodate commuter. Such services include the following.

- El Dorado Transit operates commuter service from Placerville, Shingle Springs, Cameron Park, and El Dorado Hills to downtown Sacramento.
- Folsom Stage Lines operates commuter transit service from Folsom to downtown Sacramento.
- Roseville Transit provides commuter service from Roseville to downtown Sacramento.

- Yolobus operates bus routes connecting to downtown Sacramento from Davis, Woodland, Winters, and West Sacramento. Yolobus also operates transit service between downtown Sacramento and the Sacramento International Airport.
- Yuba-Sutter Transit provides commuter transit service from Yuba and Sutter Counties to downtown Sacramento with connections to RT bus and light rail service.
- The San Joaquin Regional Transit District also provides service to Sacramento from park-and-ride locations in Stockton and Lodi.
- The Solano Transportation Authority provides service from Solano County to downtown Sacramento through its Solano Express Intercity Transit Consortium.

Existing and Planned Pedestrian and Bicycle Facilities

Within downtown Sacramento, sidewalks are provided on both sides of virtually all streets. Pedestrian crossings of major streets are accommodated by pedestrian signals and marked crosswalks at signalized intersections.

A Sacramento City/County Bicycle Task Force developed the *2010 Sacramento City/County Bikeway Master Plan* for the region. The master plan is a policy document that was prepared to coordinate and develop a bikeway system that will benefit and serve the recreational and transportation needs of the public. Officially designated bicycle facilities are classified as follows.

Class I	Off-street bike trails or paths which are physically separated from streets or roads used by motorized vehicles.
Class II	On-street bike lanes with signs, striped lane markings, and pavement legends.
Class III	On-street bike routes marked by signs and shared with motor vehicles and pedestrians. Optional four-inch edge lines painted on the pavement.

According to the Bikeway Master Plan map contained in the *City of Sacramento Parks and Recreation Master Plan 2005–2010,* existing bikeways may be found along the following roadways in the project area:

- E Street between 8th and 35th Streets,
- G Street between 16th Street and Alhambra Boulevard,
- H Street between 16th Street and Elvas Avenue,
- K Street between 14th Street and Alhambra Boulevard,
- Capitol Avenue between 15th Street and city limit, and
- Front Street between Capitol Mall and Marina View Drive and from J Street to North Sacramento.

Additional bikeways were proposed to further enhance the already extensive network. Proposed bikeways that pass near the project site include on-street bike lanes along 5th and H Streets. Bike trails are proposed around the perimeter of the Amtrak depot. The existing and proposed bikeway network is provided in Figure 2.

Study Area

A set of intersections, freeway mainline segments, freeway merge/diverge areas, and freeway ramps were selected for study based upon the anticipated volume and distributional patterns of traffic and known locations of operational difficulty; these are collectively referred in this report as the *study area*. This selection was made in collaboration with the City of Sacramento (City) and California Department of Transportation (Caltrans) staff members. The following study locations are shown in Figure 1.

Intersections:

1. 7th Street & F Street
2. 7th Street & G Street
3. 5th Street & H Street
4. 6th Street & H Street
5. 7th Street & H Street
6. Jibboom Street & I Street
7. 4th Street & I Street
8. 5th Street & I Street
9. 6th Street & I Street
10. 7th Street & I Street
11. 3rd Street & J Street
12. 5th Street & J Street
13. 6th Street & J Street
14. 7th Street & J Street

Freeway Segments:

- I-5 Northbound
  - South of I Street on-ramp
  - North of I Street on-ramp
- I-5 Southbound
  - North of J Street off-ramp
  - North of I Street on-ramp

Freeway Merge/Diverge/Weave:

- I-5 Northbound
  - P Street to J Street weave
  - I Street on-ramp
- I-5 Southbound
  - J Street off-ramp
  - I Street to Q Street weave

Freeway Ramps:

- I-5 Northbound J Street off-ramp
- I-5 Southbound J Street off-ramp

Existing Traffic Operations

Traffic Volumes

The existing traffic volumes, lane configurations, and traffic controls at study area intersections are shown in Figure 3. An inventory of traffic controls (signals, stop signs and other traffic controls) was developed for each of the study area intersections, ramps, and street and freeway mainline segments.

Freeway mainline and ramp data were taken from the Caltrans Traffic and Vehicle Data Systems website, the Freeway Performance Measurement System, and from data provided directly from Caltrans staff.

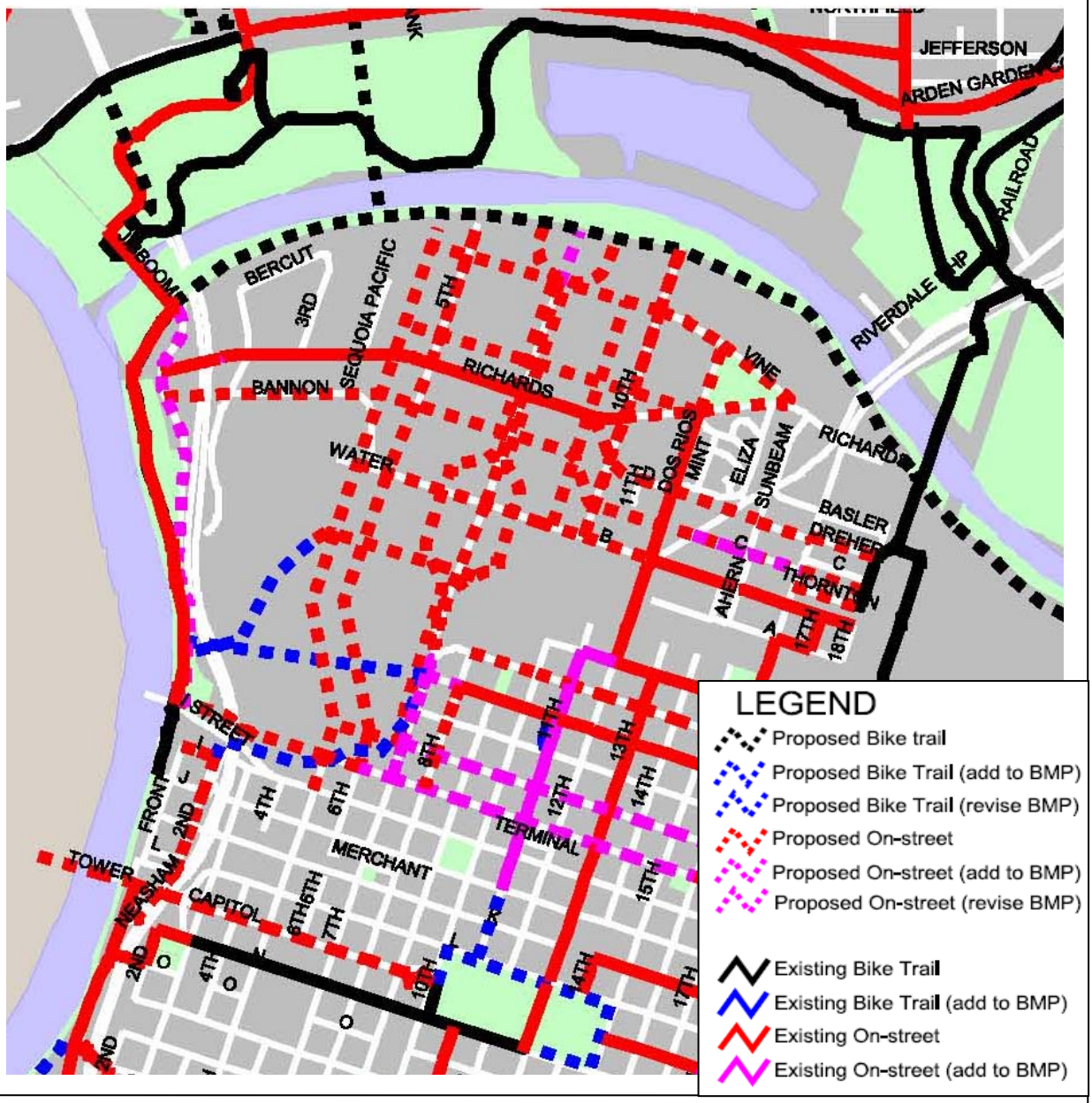

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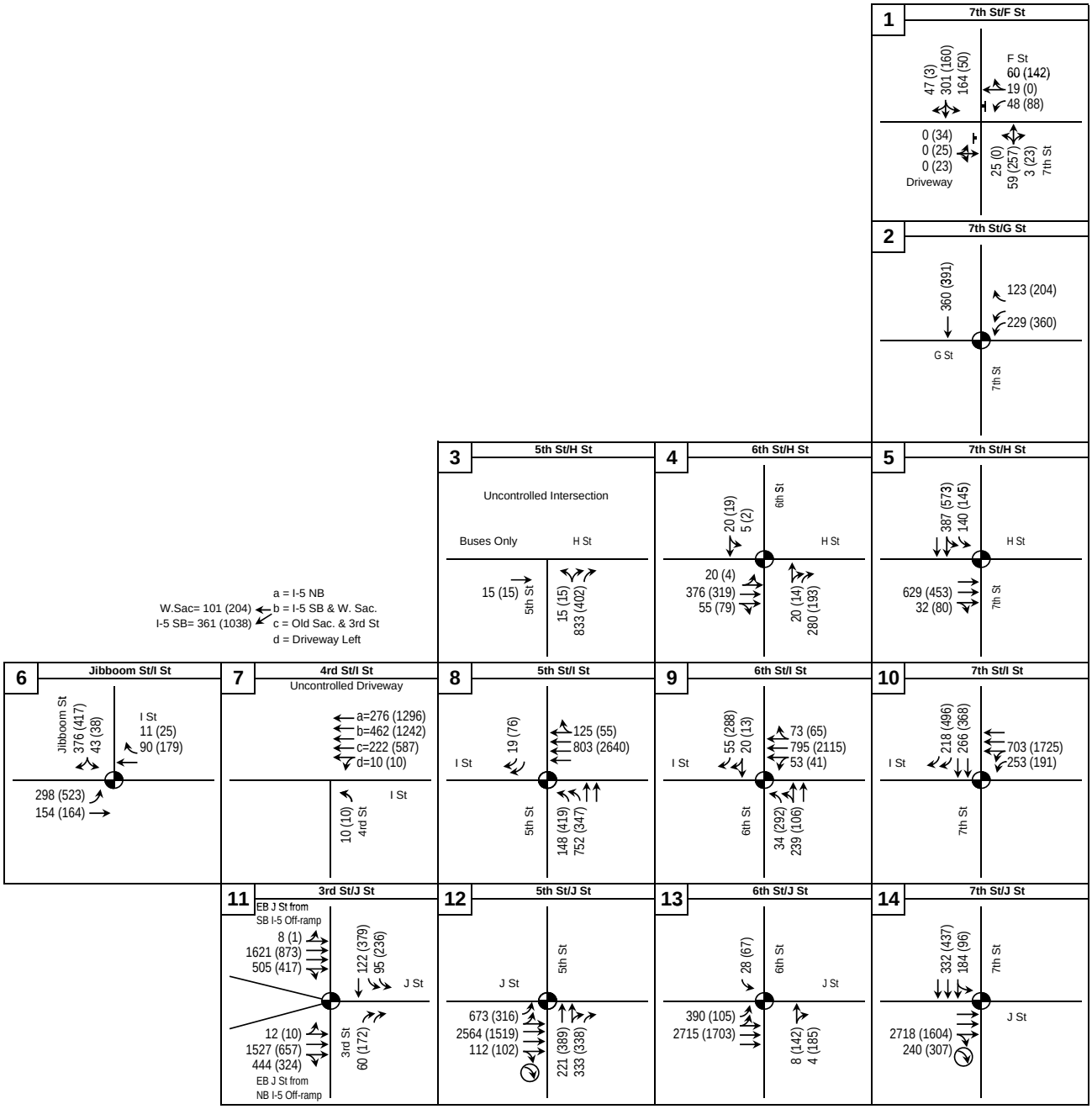
Figure 2
Existing and Proposed Bikeway Network

Source: Sacramento Bikeway Master Plan



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

= Lane provided during AM peak, only

= Lane provided during PM peak, only

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Figure 3

EXISTING TRAFFIC VOLUMES, LANES, AND TRAFFIC CONTROLS

Levels of Service

Levels of service (LOS) describe the operating conditions experienced by motorists and are a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort and convenience. LOS are designated "A" through "F" from best to worst, which cover the entire range of traffic operations that might occur. LOS A through E generally represent traffic volumes at less than roadway capacity, while LOS F represents overcapacity and/or forced flow conditions.

The *Sacramento City General Plan* (October 1988) outlines the goals and policies that coordinate the transportation and circulation system with planned land uses. The general plan (Goal D, Street and Road section) identifies LOS C as the goal for City's local and major street system except at freeway ramp intersections, where the goal is LOS D. In addition, the general plan's smart growth principles identify the need for a balanced transportation system, including walkability and improved bicycle infrastructure. The current LOS C goal is being reexamined as part of the upcoming general plan update. The revised policy is expected to recognize alternative mode opportunities and support developments in infill areas and near transit stations.

The City's pedestrian friendly Street Standards (adopted in February 2004) provide guidelines on conceptual street standards to enhance and improve the pedestrian environment and encourage alternate mode use in the city of Sacramento. The key elements of the standards are listed below:

- Eliminate rolled curb,
- Provide separated sidewalks on all streets,
- Reduce widths of collector and arterial streets,
- Reduce travel lane widths, and
- Add bike lanes to all new collector and arterial streets.

Signalized Intersections System Analysis

Signalized intersection analyses were conducted using the operational methodology outlined in the *Highway Capacity Manual* (Transportation Research Board 2000, Chapters 10 and 16).

This procedure calculates an average stopped delay per vehicle at a signalized intersection, and assigns an LOS designation based upon the delay. The method also provides a calculation of the volume-to-capacity (v/c) ratio of the critical movements at the intersection. Table 1 shows LOS criteria for signalized intersections.

Table 1. Level of Service Criteria—Signalized Intersections

Level of Service	Average Delay (seconds/vehicle)	Description
A	≤ 10	Very Low Delay: This LOS occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all.
B	> 10 and < 20	Minimal Delays: This LOS generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	> 20 and < 35	Acceptable Delay: Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (to service all waiting vehicles) may begin to appear at this LOS. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 35 and < 55	Approaching Unstable Operation/Significant Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and < 80	Unstable Operation/Substantial Delays: These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	> 80	Excessive Delays: This level, considered unacceptable to most drivers, often occurs with oversaturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at nearly saturated conditions with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

Source: Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, pages 10-16 and 16-2.

Unsignalized Intersections Analysis

Stop sign controlled intersections were analyzed utilizing the methodology outlined in the *Highway Capacity Manual* (Transportation Research Board 2000, Chapters 10 and 17). This methodology determines the LOS by calculating an average total delay per vehicle for each controlled movement and for the intersection as a whole. An LOS designation is assigned based upon the average control delay of all movements. Table 2 presents the relationship of total delay to LOS for stop-controlled intersections.

Table 2. Level of Service Criteria at Stop-Controlled Intersections

Level of Service	Average Control Delay (seconds/vehicle)
A	0–10
B	>10–15
C	>15–25
D	>25–35
E	>35–50
F	>50

Source: Transportation Research Board, *Highway Capacity Manual,* Washington, D.C., 2000, pages 10-16 and 16-2.

Freeway Segment Analysis

The freeway mainline was analyzed utilizing a methodology outlined in the *Highway Capacity Manual* (Transportation Research Board 2000, Chapters 13 and 23). Maximum service flow rates of 2,200 vehicles per lane per hour for typical freeway lanes and 1,600 vehicles per lane per

hour for auxiliary lanes were used, based upon data collected by Caltrans in the Sacramento urban area. Table 3 shows the relationship of freeway v/c ratios and density to LOS.

Table 3. Level of Service Criteria—Freeway Mainline

Level of Service	Maximum Volume-to-Capacity Ratio	Maximum Density (passenger vehicles per mile per lane)
A	0.32	11
B	0.53	18
C	0.74	26
D	0.90	35
E	1.00	45
F	Varies	Varies

Source: Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, pages 23-3 and 23-4.

Freeway Ramp and Merge/Diverge Analysis

Freeway ramps and merge/diverge areas were analyzed using a methodology outlined in the *Highway Capacity Manual* (Transportation Research Board 2000, Chapters 13 and 25). Freeway ramp operating conditions are dependent upon traffic volumes and the ramp characteristics. These characteristics include the length and type of acceleration/deceleration lanes; free-flow speed of the ramps; number of lanes; grade; and types of facilities that the ramps interconnect. Table 4 shows the relationship of LOS to freeway density.

Table 4. Level of Service Criteria—Freeway Ramp Merge/Diverge Areas

Level of Service	Maximum Density (passenger vehicles per mile per lane)
A	10
B	20
C	28
D	35
E	> 35
F	Demand exceeds capacity

Source: Transportation Research Board, *Highway Capacity Manual,* Washington, D.C., 2000, page 25-5.

As shown in Table 5, the basic criterion used to determine Freeway Ramp LOS is vehicle density in the merge or diverge area. Note that the 2000 *Highway Capacity Manual*[1] requires that several additional criteria be considered so that LOS F is automatically attained for a ramp if:

- At an on-ramp, volume exceeds capacity (V>C) in:

1. The segment of a freeway downstream, or
2. The merge-area defined by the on-ramp and the two adjacent freeway lanes

- At an off-ramp, volume exceeds capacity (V>C) in:

[1] See *Highway Capacity Manual*, Transportation Research Board 2000, pages 13-22 and 13-23.

1. The segment of a freeway upstream OR downstream,
2. The off-ramp itself, or
3. The diverge-area defined by the two adjacent freeway lanes approaching the ramp

Table 5 shows maximum service flow rates for freeway ramps, based upon information presented in the *Highway Capacity Manual* (Transportation Research Board 2000, Chapters 13 and 25; 1985, Chapter 5). This methodology is used in cases where the freeway ramp configuration governs the operating condition.

Table 5. Level of Service Definitions—Freeway Ramps

Level of Service	Service Flow Rates for Single Lane/ Two Lane Ramps Ramp Design Speed (miles per hour)					Definition
	< 20	21–30	31–40	41–50	> 51	
A	(1)	(1)	(1)	(1)	800/ 1,550	Conditions of free flow; speed is controlled by driver's desires, speed limits, or physical conditions.
B	(1)	(1)	(1)	1,150/ 2,250	1,150/ 2,350	Conditions of stable flow; operating speeds beginning to be restricted; little or no restrictions on maneuverability from other vehicles.
C	(1)	(1)	1,400/ 2,600	1,600/ 3,100	1,700/ 3,350	Conditions of stable flow; speeds and maneuverability more closely restricted.
D	(1)	1,550/ 2,900	1,700/ 3,200	1,950/ 3,850	2,050/ 4,150	Conditions approach unstable flow; tolerable speeds can be maintained, but temporary restrictions may cause extensive delays; little freedom to maneuver; comfort and convenience low.
E	1,800/ 3,200	1,900/ 3,500	2,000/ 3,800	2,100/ 4,100	2,200/ 4,400	Conditions approach capacity; unstable flow with stoppages of momentary duration; maneuverability severely limited.
F	Widely Variable					Forced flow conditions; stoppages for long periods; low operating speeds.

Sources: Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, page 25-5.
Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 1985, page 5-15.
(1) LOS not attainable due to restricted design speed.

The freeway ramps were also analyzed in terms of the expected queues versus the storage capacity. The length of a vehicle is assumed to be 25 feet long.

Existing Levels of Service

Intersections

The existing a.m. and p.m. peak hour operating conditions at the study area intersections are shown in Table 6. A number of study intersections operate below the City's LOS C goal.

Table 6. Intersection Levels of Service—Existing Conditions

Intersection	Traffic Control	Peak Hour	Delay Type	Existing	
				LOS[1]	Delay[2]
1. 7th Street & F Street	Minor Stop Controlled	a.m.	Average	A	4.7
			Worst Move	C	16.1
		p.m.	Average	A	5.1
			Worst Move	B	12.7
2. 7th Street & G Street	Signal	a.m.	Average	B	10.6
		p.m.		B	10.6
3. 5th Street & H Street	Minor Stop Controlled	a.m.	Average	A	0.5
			Worst Move	C	18.1
		p.m.	Average	A	0.7
			Worst Move	B	12.2
4. 6th Street & H Street	Signal	a.m.	Average	B	13.4
		p.m.		A	4.8
5. 7th Street & H Street	Signal	a.m.	Average	B	14.2
		p.m.		B	13.2
6. Jibboom Street & I Street	Signal	a.m.	Average	B	15.1
		p.m.		C	20.2
7. 4th Street & I Street	Signal	a.m.	Average	Intersection does not exist	
		p.m.			
8. 5th Street & I Street	Signal	a.m.	Average	B	15.7
		p.m.		B	10.5
9. 6th Street & I Street	Signal	a.m.	Average	B	17.2
		p.m.		C	26.0
10. 7th Street & I Street	Signal	a.m.	Average	A	8.8
		p.m.		C	21.8
11. 3rd Street & J Street	Signal	a.m.	Average	**E**	**57.6**
		p.m.		C	27.0
12. 5th Street & J Street	Signal	a.m.	Average	B	11.8
		p.m.		B	11.8
13. 6th Street & J Street	Signal	a.m.	Average	B	11.1
		p.m.		A	7.3
14. 7th Street & J Street	Signal	a.m.	Average	**D**	**38.5**
		p.m.		B	10.6

Source: Dowling Associates, Inc., 2008.
Note: **Bold** values indicate substandard traffic operations.
[1] LOS = Level of Service.
[2] Delay = Average Delay in seconds.

Freeway Mainline

Table 7 shows levels of service for freeway mainline study segments. Detailed calculations are provided in Appendix A. The analysis showed that many of the freeway mainline study segments operate acceptably during peak periods although many of the freeway study segments operate at LOS F during peak periods. The analysis is based on the number of vehicles that can travel through each freeway segment. During congested conditions drivers must divert to other routes, fewer vehicles are able to get through than the actual demand would otherwise indicate, resulting in lower traffic counts and higher levels of service than are typically observed. The analysis shows many segments are near capacity (v/c is close to 1.00), so the analysis of future conditions would identify impacts on segments that are already congested.

Table 7. Freeway Mainline Operations—Existing Conditions

Location	a.m. Peak Hour			p.m. Peak Hour		
	Volume	V/C[1]	LOS[2]	Volume	V/C[1]	LOS[2]
Northbound I-5						
South of I Street on-ramp	6,689	0.83	D	7,836	0.97	**F**[3]
North of I Street on-ramp	6,965	0.73	C	9,132	0.96	**F**[3]
Southbound I-5						
North of J Street off-ramp	7,667	0.80	D	6,913	0.72	C
North of I Street on-ramp	5,730	0.71	C	5,646	0.70	**F**[3]

Source: Dowling Associates, Inc., 2008.
Note: **Bold** values show substandard traffic operations.
[1] V/C = volume/capacity.
[2] LOS = Level of Service.
[3] Queue extends from downstream bottleneck.

Freeway Interchanges

Table 8 provides a summary of traffic operations at study area interchanges and backup calculations are provided in Appendix A.

Table 8. Freeway Interchange Operations—Existing Conditions

Ramp	a.m. Peak Hour			p.m. Peak Hour		
	LOS[1]	Density[2]	Volume	LOS[1]	Density[2]	Volume
Northbound I-5						
P Street to J Street weave	E	36.27	9,170	D	31.34	8,378
I Street on-ramp	B	14.35	276	C	24.73	1,296
Southbound I-5						
J Street off-ramp	B	19.92	1,937	B	17.96	1,267
I Street to Q Street weave	C	23.10	6,620	C	25.67	7,265

Source: Dowling Associates, Inc., 2008.
Note: **Bold** values show substandard traffic operations.
[1] LOS = Level of Service.
[2] Density of passenger vehicles per mile per lane in the merge or diverge area.

Freeway Ramp Queues

Queue summary of freeway off-ramp queues is provided in Table 9. Both study area off-ramps have adequate storage capacity.

Table 9. Freeway Ramp Queues—Existing Conditions

Location	Storage Capacity (feet)	a.m. Peak Hour		p.m. Peak Hour	
		Queue (feet)	Adequate Capacity	Queue (feet)	Adequate Capacity
I-5 Southbound J Street Off-Ramp	1300	537	Yes	180	Yes
I-5 Northbound J Street Off-Ramp	720	623	Yes	223	Yes

Source: Dowling Associates, Inc., 2008.

Pedestrian and Bicycle Access

Pedestrian and bicycle access through the site is constrained due to the limited site access opportunities.

Regulatory Setting

Roadway operations are regulated by agencies with jurisdiction of a particular roadway. In the study area, the interstate freeways are under the jurisdiction of Caltrans. The nonfreeway roadways are under the City's jurisdiction and governed by the policies and standards in the City's general plan.

Caltrans, as assigned by FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see *23 Code of Federal Regulations* [*CFR*] *652*). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally-assisted programs is governed by the USDOT regulations (*49 CFR part 27*) implementing Section 504 of the Rehabilitation Act (*29 U.S. Code 794*). FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including transportation enhancement activities.

Impacts and Mitigation Measures

Methods of Analysis

Traffic forecasts for baseline conditions were prepared using travel demand models developed by Sacramento Area Metropolitan Council of Governments (SACOG) with modifications to land uses to include project that have already been approved. Traffic forecasts for Phase 3 cumulative conditions were also prepared using travel demand models according the procedures described in the RSP EIR.

Automobile Trip Generation

Daily trip generation for Phase 2 is based upon information compiled by the Institute of Transportation Engineers (*Trip Generation, Seventh Edition*, 2003 and *Trip Generation Handbook*, 2004). An assumption was made that 25% of the trips would occur during each of the a.m. and p.m. peak hours and that 80% of the peak hour trips would be inbound in the morning and 80% would be outbound during the afternoon peak hour.

Trip generation was performed in two steps. First, the number of trips for the existing facility was computed and those trips were removed from the existing site access points and the larger transportation system. Second, the number of trips expected to be generated by the new Phase 2 project was estimated and those trips were assigned to the proposed new access points. The net increase in trip generation associated with a 153-space increase in on-site parking is shown in

Table 10. The gross trip generation for the existing Depot and the proposed Phase 2 project is provided in Appendix A.

Table 10. Trip Generation Summary for Phase 2

Land Use Category	Amount		Source	Trips Generated						
				Weekday	a.m. Peak Hour			p.m. Peak Hour		
					In	Out	Total	In	Out	Total
Long Distance Transit Service	153	New parking spaces	ITE(093)	384	77	19	96	19	77	96
Adjustments										
Adjustment for transit access to Depot (-11.1%)				-43	-9	-2	-11	-2	-9	-11
Adjustment for walk, bike, other access to Depot (-2.8%)				-11	-2	-1	-3	-1	-2	-3
New external auto trips				330	66	16	82	16	66	82

Source: Dowling Associates, Inc., 2008.

Phase 2 would generate approximately 330 new daily trips at the project site, with approximately 82 trips during each of the peak commute hours.

Adjustments to the Institute of Transportation Engineers trip generation estimates were made to account for higher transit ridership and higher levels of walking and bicycle use within the highly urbanized project setting. Adjustments for the higher use of transit and walk, bike, and other nonauto travel were based on information contained in the *Pre-Census Travel Behavior Report: Analysis of the 2000 SACOG Household Travel Survey* (DKS, 2001).

Details of the trip generation estimates and the adjustments made are provided in Appendix A.

Transit Trip Generation

No new local transit trip ridership is expected to be generated by the Phase 2 project.

Travel Demand Modeling

The SACOG Sacramento Metropolitan (SACMET) model is a mathematical tool that estimates the general travel choices people will make, based upon the primary social, demographic, and physical conditions that affect such choices. The travel demand models used for the analysis of baseline conditions were based on the SACMET model with modifications made as necessary to reflect project that have already been approved. The travel demand models were used to produce forecasts of roadway link traffic volumes and turning movements at study intersections.

The first step in the travel forecasting process was to develop estimated traffic volumes for existing and baseline conditions. The differences in the two travel models reflect the changes in traffic associated with the transportation system modifications described above and the effects of developments that have already been approved (baseline conditions), listed below. The differences in traffic volumes produced by the travel model for existing and baseline conditions were added to existing traffic volumes observed in the field to develop baseline no project traffic volume estimates. Additional detail on the travel demand modeling process is provided in the RSP EIR.

Trip Distribution and Assignment

The removal of trips from the existing Depot and the assignment of new trips for the Phase 2 project were performed using the Traffix software package with the assumption that motorists

would use the shortest path to their destinations. The distribution of peak hour project trips (shown in Figure 4) was estimated based on trip distribution patterns identified from the travel demand model for office trips.

Standards of Significance

In accordance with the California Environmental Quality Act, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. For the purposes of this analysis, an impact is considered significant if implementation of the specific plan (project) would have the effects described below.

The standards of significance in this analysis are based upon the current practice of the appropriate regulatory agencies. For most areas related to transportation and circulation, the City's standards have been used. For traffic flow on the freeway system and associated interchanges, Caltrans' standards have been used.

Intersections

In the city of Sacramento, a significant traffic impact occurs at a signalized or unsignalized intersection (except for freeway ramp/arterial intersections within North Natomas) when:

- traffic generated by the project degrades peak period LOS from A, B, or C (without the project) to D, E, or F (with the project); or,
- the LOS (without project) is D, E, or F and project-generated traffic increases the average vehicle delay by 5 seconds or more.

These standards have been developed consistent with a goal set forth in the City's general plan update (1988). Specifically, Section 5-11, Goal D, states to "[w]ork towards achieving an LOS C on the City's local and major street system."

Freeway Ramps and Mainline

Caltrans considers the following to be significant impacts.

- Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway.
- Project traffic increases that cause any ramp's merge/diverge LOS to be worse than the freeway's LOS.
- Project traffic increases that cause the freeway LOS to deteriorate beyond LOS defined for the freeway in the Route Concept Report. For the freeway in the study area, the standard is LOS E.
- The expected queue at a ramp is greater than the storage capacity.

Transit System

For the purposes of this analysis, impacts to the transit system are considered significant if the project would do the following.

- Increase ridership, when added to the existing or future ridership, would exceed available or planned system capacity. *Capacity* is defined as the total number of passengers the system of buses and light rail vehicles can carry during the peak hours of operations.

Bikeways

For the purposes of this analysis, impacts to bikeways are considered significant if the project would:

- hinder or eliminate an existing designated bikeway, or interfered with implementation of a proposed bikeway; or
- result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

Pedestrian Circulation

For the purposes of this analysis, impacts to pedestrian circulation are considered significant if the project would:

- result in unsafe conditions or create a hindrance for pedestrians, including unsafe pedestrian/bicycle or pedestrian/motor vehicle access.

Traffic Circulation and Safety

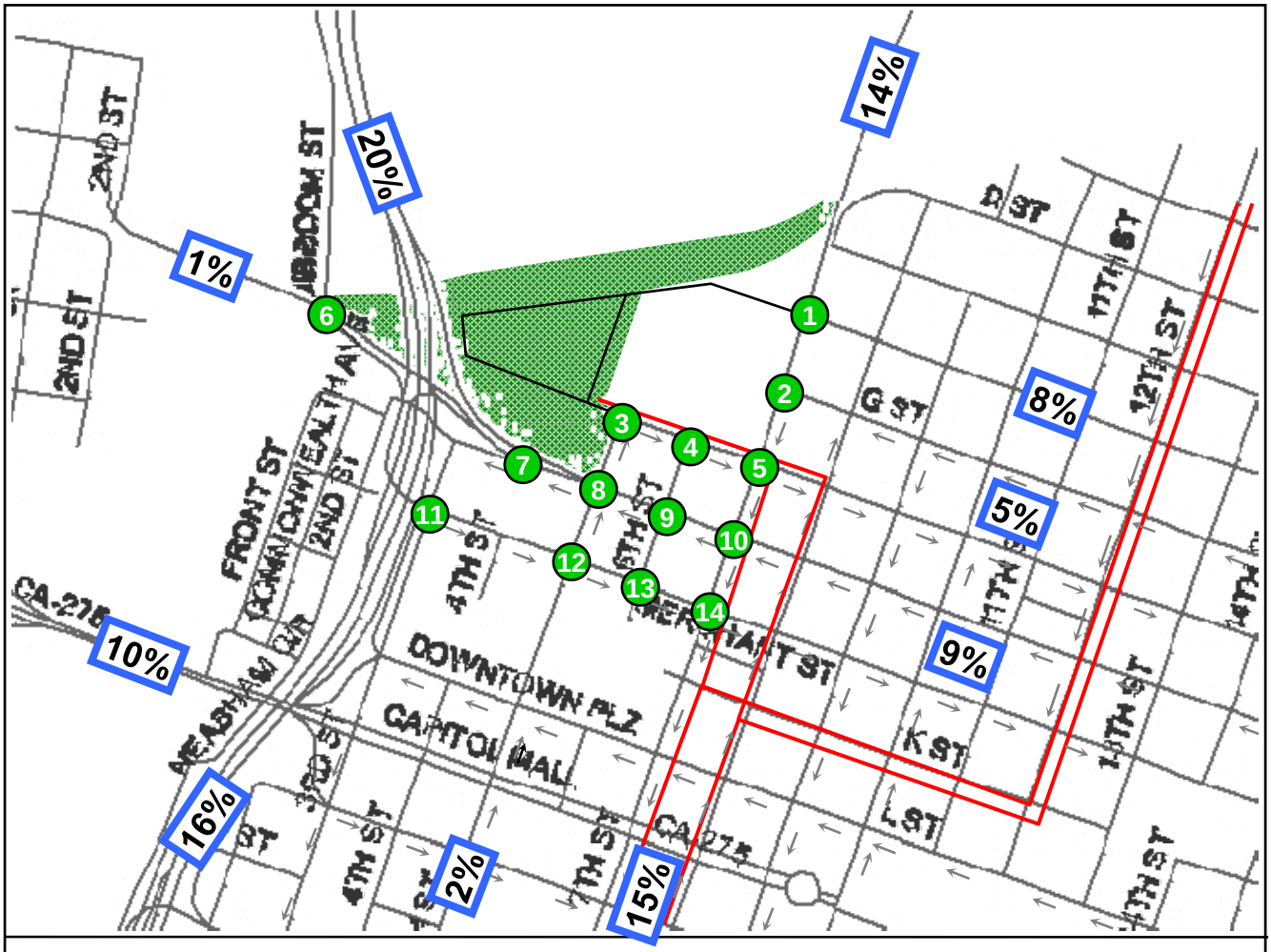
For the purposes of this analysis, impacts to traffic circulation and safety are considered significant if the project would:

- not comply with City design standards or normal traffic engineering practices.

Baseline Conditions

The analysis of baseline conditions considers the potential traffic impacts of Phase 2 in the context of other projects in the study vicinity that have already been approved. The following is a list of projects that have been approved and may potentially affect traffic conditions:

- Crocker Art Museum Expansion,
- 500 Capitol Mall,
- 1012 K Street,
- Creamery,
- 601 Capitol Mall (partial development),
- Metro Place Office/Residential,
- 15th & L Street Hotel,
- Sutter Medical Center and the Trinity Cathedral, and
- Discovery Center.



Dowling Associates, Inc.

Sacramento Intermodal Transit Facility Traffic Study

Figure 4

TRIP DISTRIBUTION FOR PHASE 2

Phase 2 Impacts and Mitigation Measures

TRANS-1 Phase 2 would increase traffic volumes at study area intersections and cause the LOS to deteriorate. This is considered a significant impact.

A summary of intersection operations for baseline conditions is provided in Table 11.

Table 11. Intersection Levels of Service—Phase 2

Intersection	Traffic Control	Peak Hour	Delay Type	Baseline		Phase 2 Project	
				LOS[1]	Delay[2]	LOS[1]	Delay[2]
1. 7th Street & F Street	Minor Stop Controlled	a.m.	Average	A	4.7	A	5.0
			Worst Move	C	16.1	C	16.7
		p.m.	Average	A	5.0	A	5.2
			Worst Move	B	12.9	B	13.0
2. 7th Street & G Street	Signal	a.m.	Average	B	10.6	B	10.8
		p.m.		B	10.9	B	10.9
3. 5th Street & H Street	Minor Stop Controlled	a.m.	Average	A	0.5	A	2.9
			Worst Move	C	18.1	**D**	**34.2**
		p.m.	Average	A	0.7	A	4.5
			Worst Move	B	12.3	B	14.2
4. 6th Street & H Street	Signal	a.m.	Average	B	13.3	B	13.9
		p.m.		A	4.8	A	5.6
5. 7th Street & H Street	Signal	a.m.	Average	B	14.2	B	14.4
		p.m.		B	13.4	B	13.6
6. Jibboom Street & I Street	Signal	a.m.	Average	B	15.1	B	15.1
		p.m.		C	21.1	C	20.2
7. 4th Street & I Street	Signal	a.m.	Average	Intersection does not exist		B	11.9
		p.m.				A	4.1
8. 5th Street & I Street	Signal	a.m.	Average	B	15.8	B	15.9
		p.m.		B	10.6	B	10.7
9. 6th Street & I Street	Signal	a.m.	Average	B	17.3	B	17.5
		p.m.		C	27.5	C	27.2
10. 7th Street & I Street	Signal	a.m.	Average	A	8.9	A	9.0
		p.m.		C	22.1	C	22.1
11. 3rd Street & J Street	Signal	a.m.	Average	**E**	**58.2**	**E**	**63.5**
		p.m.		C	27.0	C	29.0
12. 5th Street & J Street	Signal	a.m.	Average	B	11.8	B	11.8
		p.m.		B	12.0	B	12.0
13. 6th Street & J Street	Signal	a.m.	Average	B	11.2	B	11.1
		p.m.		A	7.4	A	6.7
14. 7th Street & J Street	Signal	a.m.	Average	**D**	**41.4**	**D**	**41.3**
		p.m.		B	12.2	B	14.0

Source: Dowling Associates, Inc., 2008.
Note: **Bold** values indicate substandard traffic operations.
[1] LOS = Level of Service.
[2] Delay = Average delay in seconds.

Phase 2 would increase traffic volumes at study area intersections and would cause significant impacts at the following intersections:

- 5th Street/H Street (a.m. peak hour), and

- 3rd Street/J Street (a.m. peak hour).

Mitigation Measures (Phase 2)

Because none of the intersections analyzed as part of this system remain affected after mitigation, the impact to the transportation system after mitigation would be ***less than significant***.

MM TRANS-1(a) At the 5th Street/H Street intersection, the City will install all-way stop control. With implementation of this mitigation measure, the LOS would be improved to LOS B (11.7 seconds delay) in the a.m. peak hour and would operate at LOS A (7.6 seconds delay) in the p.m. peak hour. These results are shown in Table 12.

MM TRANS-1(b) At the 3rd Street/J Street intersection, the City will optimize the signal timing in the a.m. peak hour. With implementation of this mitigation measure, the LOS would be improved to LOS D (54.0 seconds delay) in the a.m. peak hour. Although the delay at this intersection would be greater than the City standard, there would be less delay than without the project. These results are shown in Table 12.

Table 12. Intersection Levels of Service with Mitigation—Phase 2

Intersection	Traffic Control	Peak Hour	Delay Type	Baseline		Phase 2 Project		With Mitigation	
				LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]
3. 5th Street & H Street	Minor Stop Controlled	a.m.	Average	A	0.5	A	2.9	B	11.7
			Worst Move	C	18.1	**D**	**34.2**	n/a: all-way stop	
		p.m.	Average	A	0.7	A	4.5	A	7.6
			Worst Move	B	12.3	B	14.2	n/a: all-way stop	
11. 3rd Street & J Street	Signal	a.m.	Average	**E**	**58.2**	**E**	**63.5**	**D**	**54.0**
		p.m.		C	26.0	C	28.1	C	29.0

Source: Dowling Associates, Inc., 2008.
Note: **Bold** values indicate substandard traffic operations.
[1] LOS = Level of Service.
[2] Delay = Average delay in seconds.

TRANS-2 Phase 2 would add traffic to the study freeway mainline segments but would not cause the LOS to degrade below LOS E. Therefore, Phase 2 impacts to freeway mainline segments would be less than significant.

Freeway mainline operating conditions for baseline conditions are summarized in Table 13. Phase 2 would add traffic to the following segments already operating at LOS F at the following location:

- Mainline I-5 northbound north of the I Street on-ramp (p.m. peak hour), where Phase 2 would add 13 trips (0.14% of the total volume) to this freeway segment.

This is considered a less-than-significant impact; therefore, no mitigation is required.

Table 13. Freeway Mainline Operations—Phase 2

Location	Time Period	Measure	Baseline	Phase 2 Project
Northbound I-5				
South of I Street on-ramp	a.m. Peak Hour	Vol	6,755	6,755
		V/C[1]	0.74	0.74
		LOS[2]	C	C
	p.m. Peak Hour	Vol	7,957	7,957
		V/C[1]	0.97	0.97
		LOS[2]	**F[3]**	**F[3]**
North of I Street on-ramp	a.m. Peak Hour	Vol	7,040	7,044
		V/C[1]	0.84	0.84
		LOS[2]	D	D
	p.m. Peak Hour	Vol	9,268	9,281
		V/C[1]	0.99	0.99
		LOS[2]	**F[3]**	**F[3]**
Southbound I-5				
North of J Street off-ramp	a.m. Peak Hour	Vol	7,674	7,688
		V/C[1]	0.80	0.81
		LOS[2]	D	D
	p.m. Peak Hour	Vol	7,089	7,092
		V/C[1]	0.74	0.74
		LOS[2]	D	D
North of I Street on-ramp	a.m. Peak Hour	Vol	5,748	5,748
		V/C[1]	0.95	0.95
		LOS[2]	E	E
	p.m. Peak Hour	Vol	5,794	5,794
		V/C[1]	0.96	0.96
		LOS[2]	**F[3]**	**F[3]**

Source: Dowling Associates, Inc., 2008.
Note: **Bold** values show substandard traffic operations.
[1] V/C = volume/capacity.
[2] LOS = Level of Service.
[3] Queue extends from downstream bottleneck.

TRANS-3 Phase 2 would add traffic to the study freeway interchanges but would not cause the LOS to degrade below those of the freeway mainline. Therefore, Phase 2 impacts to freeway interchanges would be less than significant.

Freeway interchange operations under baseline conditions are summarized in Table 14. Phase 2 would add traffic to the following interchange area, which would operate below the freeway mainline LOS:

- P Street to J Street weave on northbound I-5, where Phase 2 would add 12 vehicles or 0.13% of the total volume in the weaving area.

This is considered a less-than-significant impact; therefore, no mitigation is required.

Table 14. Freeway Interchange Operations—Phase 2

Ramp	Time Period	Measure	Baseline	Phase 2 Project
Northbound I-5				
P Street to J Street weave	a.m. Peak Hour	LOS[1]	E	E
		Density[2]	36.67	36.72
		Volume	9242	9254
	p.m. Peak Hour	LOS[1]	D	D
		Density[2]	31.93	31.95
		Volume	8509	8512
I Street on-ramp	a.m. Peak Hour	LOS[1]	B	B
		Density[2]	14.54	14.57
		Volume	285	289
	p.m. Peak Hour	LOS[1]	C	C
		Density[2]	25.08	25.19
		Volume	1311	1324
Southbound I-5				
J Street off-ramp	a.m. Peak Hour	LOS[1]	B	C
		Density[2]	19.94	20.00
		Volume	1937	1951
	p.m. Peak Hour	LOS[1]	B	B
		Density[2]	18.42	18.42
		Volume	1295	1298
I Street to Q Street weave	a.m. Peak Hour	LOS[1]	C	C
		Density[2]	23.17	23.19
		Volume	6640	6644
	p.m. Peak Hour	LOS[1]	C	C
		Density[2]	26.44	26.49
		Volume	7445	7457

Source: Dowling Associates, Inc., 2008.
Note: **Bold** values show substandard traffic operations.
[1] LOS = Level of Service.
[2] Numbers with decimals indicate the density of passenger vehicles per mile per lane in the merge or diverge area. Whole numbers indicate the ramp flow rate in passenger car equivalents where a lane is added to the freeway at an on-ramp.

TRANS-4 Phase 2 would add traffic to the study freeway off-ramps but would not cause freeway off-ramp queues to exceed the available storage capacity. Therefore, Phase 2 impacts to freeway interchanges would be less than significant.

Freeway interchange operations under baseline conditions are summarized in Table 15.

Table 15. Freeway Ramp Queues—Phase 2

Location	Storage Capacity (feet)	No Project				Phase 2 Project			
		a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour	
		Queue (feet)	Adequate Capacity	Queue (feet)	Adequate Capacity	Queue (feet)	Adequate Capacity	Queue (feet)	Adequate Capacity
I-5 South-bound J Street off-ramp	1,300	540	Yes	184	Yes	545	Yes	184	Yes
I-5 North-bound J Street off-ramp	720	623	Yes	223	Yes	607	Yes	223	Yes

Source: Dowling Associates, Inc., 2008.

TRANS-5 Phase 2 would not increase demand on the bus or light rail transit system. Therefore, Phase 2 would have no impact on the local public transit system.

TRANS-6 Phase 2 would not interfere with the implementation of proposed bikeways. Therefore, Phase 2 would have no impact on the bikeway system.

TRANS-7 Phase 2 would not increase the number of pedestrians on the transportation system; however, some project design elements could result in unsafe conditions for pedestrians. This is considered a potentially significant impact.

Phase 2 would not result in the number of long-distance transit riders expected to walk to and from the project site. The specific design elements for pedestrian access have not been defined at a sufficient level of detail to ensure that unsafe conditions for pedestrians would not occur; therefore, this is considered a **potentially significant impact**.

Mitigation Measures (Phase 2)

MM TRANS-7 Pursuant to Title 16 (Subdivisions) and Title 18 (Development Requirements) of the City of Sacramento Municipal Code, Phase 2 will be conditioned to provide all frontage improvements which include sidewalks, gutters and planters to the satisfaction of Development Engineering Division. With implementation of this mitigation measure, Phase 2 is not anticipated to result in unsafe conditions for pedestrians, including unsafe bicycle/pedestrian or pedestrian/motor vehicle conflicts, and the potential impact would be reduced to a **less-than-significant level**.

TRANS-8 Phase 2 could result in noncompliance with City design standards or normal traffic engineering practices. This is considered a potentially significant impact.

The specific design elements for Phase 2 on-site traffic circulation have not been defined in sufficient detail to ensure that all design elements would comply with City design standards or normal traffic engineering practices; therefore, this is considered a **potentially significant impact**.

Mitigation Measures (Phase 2)

MM TRANS-8 Phase 2 will be conditioned to provide design elements for traffic circulation to the satisfaction of Development Engineering Division. With implementation of this mitigation measure, Phase 2 would comply with City design standards or normal traffic engineering practices and the potential impact would be reduced to a **less-than-significant level**.

Appendix A. Project Traffic Data

Sacramento Intermodal Transportation Facility

Trip Generation

Land Use Category	Amount	Source	Trips Generated						
			Weekday	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Automobile Trips									
Long Distance Transit Service	153 parking spaces	ITE(093)	384	77	19	96	19	77	96
Adjustments									
Adjustment for transit access to Depot (-11.1%)			-43	-9	-2	-11	-2	-9	-11
Adjustment for walk, bike, other access to Depot (-2.8%)			-11	-2	-1	-3	-1	-2	-3
New External Auto Trips			330	66	16	82	16	66	82
New External Trips Percent of Total Project Trips			86%	86%	84%	85%	84%	86%	85%

Source: Dowling Associates, Inc. 2008

Proposed Parking Spaces: Phase 2 Project	630
Existing Parking Spaces at the Depot	
Amtrak (managed by Platinum Parking)	242
Federal Court (managed by Platinum Parking)	126
Lot W (including handicapped spaces)	95
REA	14
Total	477

Trip Generation for Existing Conditions

Land Use Category	Amount	Source	Trips Generated						
			Weekday	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Automobile Trips									
Long Distance Transit Service	477 parking spaces	ITE(093)	1,197	239	60	299	60	239	299
Adjustments									
Adjustment for transit access to Depot (-11.1%)			-133	-26	-7	-33	-7	-26	-33
Adjustment for walk, bike, other access to Depot (-2.8%)			-34	-7	-1	-8	-1	-7	-8
New External Auto Trips			1,030	206	52	258	52	206	258
New External Trips Percent of Total Project Trips			86%	86%	87%	86%	87%	86%	86%

Source: Dowling Associates, Inc. 2008

Trip Generation for Proposed Phase 2

Land Use Category	Amount	Source	Trips Generated						
			Weekday	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Automobile Trips									
Long Distance Transit Service	630 parking spaces	ITE(093)	1,581	316	79	395	79	316	395
Adjustments									
Adjustment for transit access to Depot (-11.1%)			-175	-35	-9	-44	-9	-35	-44
Adjustment for walk, bike, other access to Depot (-2.8%)			-44	-9	-2	-11	-2	-9	-11
New External Auto Trips			1,362	272	68	340	68	272	340
New External Trips Percent of Total Project Trips			86%	86%	86%	86%	86%	86%	86%

Source: Dowling Associates, Inc. 2008

Trip Generation
Adjustments to ITE Trip Generation Rates for High Non-Auto Travel

Shares of Total Trips			
Transit Shares	**Work Trips[a]**	**Non-Work Trips[b]**	**Total**
Walk Access			
Downtown	7.4%	1.8%	
Suburban	1.4%	0.3%	
Increase Above Suburban Conditions	6.0%	1.5%	
Drive Access			
Downtown	6.2%	1.2%	
Suburban	0.1%	0.3%	
Increase Above Suburban Conditions	6.1%	0.9%	
Walk, Bike & Other Non-Auto Shares			
Downtown	4.5%	18.8%	
Suburban	2.8%	6.5%	
Increase Above Suburban Conditions	1.7%	12.3%	
Adjustments for Higher Transit Use Downtown			
Office[1]	10.9%	0.2%	11.1%
Adjustments for Higher Walk, Bike & Other Non-Auto Travel Downtown			
Office[1]	1.5%	1.2%	2.8%
Transit Trips			
	Work Trips	**Non-Work Trips**	
Office[1]	12.2%	0.3%	12.5%

[1] Assumes 90 percent of office trips are work trips.

Note: Adjustments for Amtrak trip generation during the peak hours are assumed to be the same as for office travel.

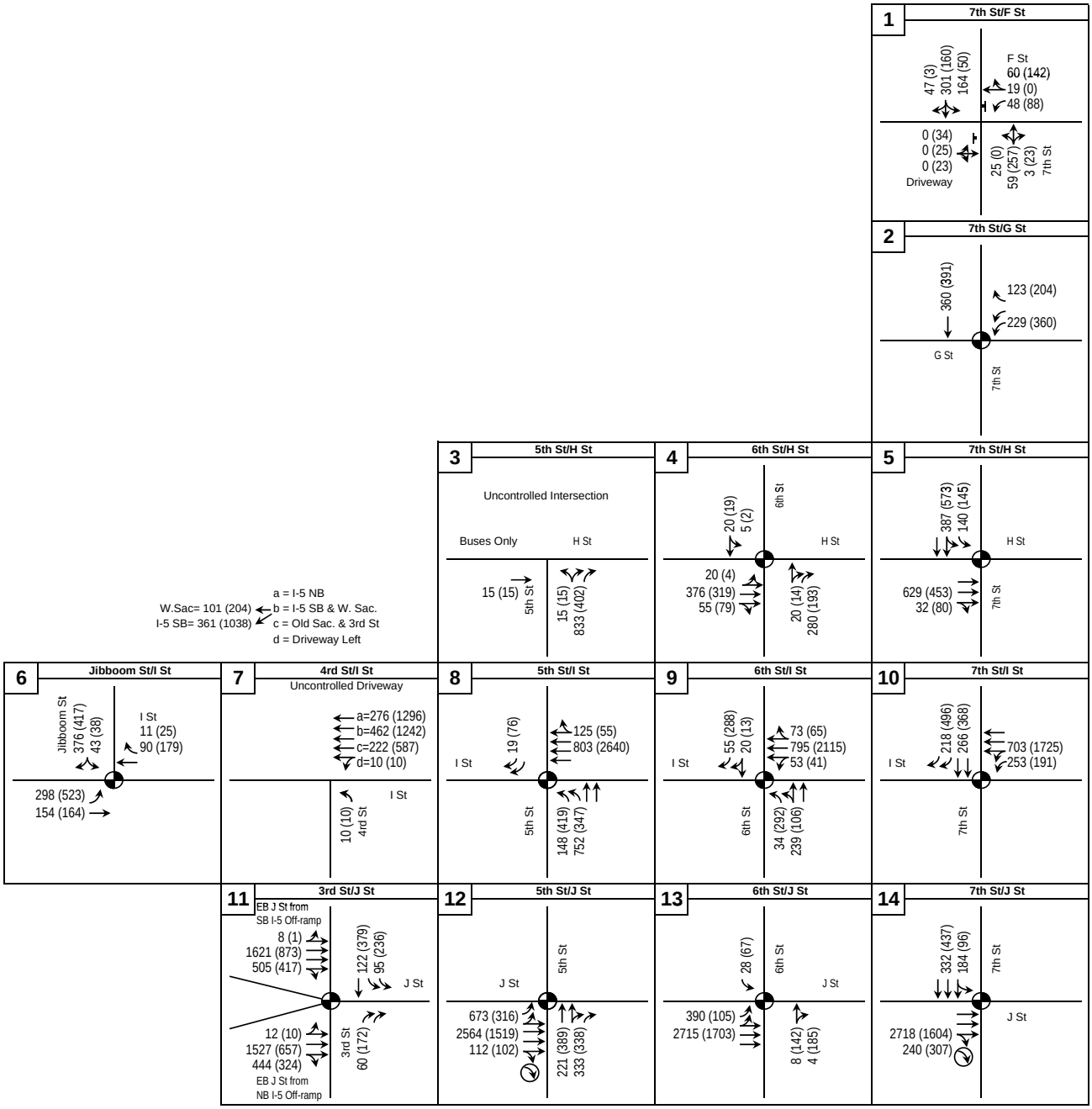
Source: *Pre-Census Travel Behavior Report: Analysis of the 2000 SACOG Household Travel Survey* , DKS, 2001.
Table references from the source are provided as follows:

[a] Table A26

[b] Table A27

[c] The amount of transit use for each trip purpose is based on the following data from Table A33:

Travel Hours	Home-Work	Home-Non-Work	Non Home-Based	Total
AM Peak Hour	73,190	78,124	25,868	177,182
PM Peak Hour	60,563	67,068	47,784	175,415
Daily	473,704	861,535	557,764	1,893,003



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

= Lane provided during AM peak, only

= Lane provided during PM peak, only

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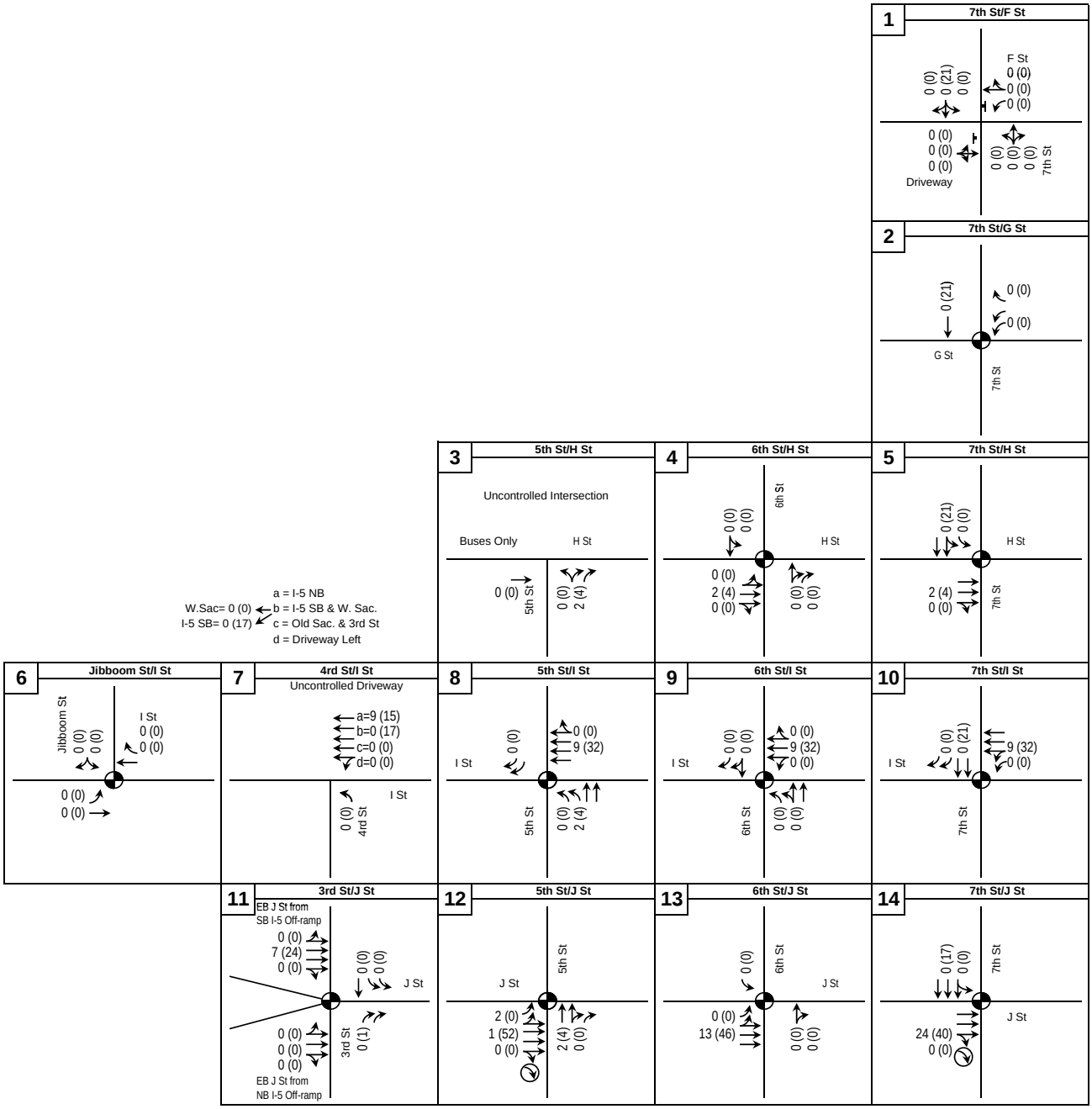
Sacramento Intermodal Transit Facility Traffic Study

Figure 1

EXISTING TRAFFIC VOLUMES, LANES, AND TRAFFIC CONTROLS



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

= Lane provided during AM peak, only

= Lane provided during PM peak, only

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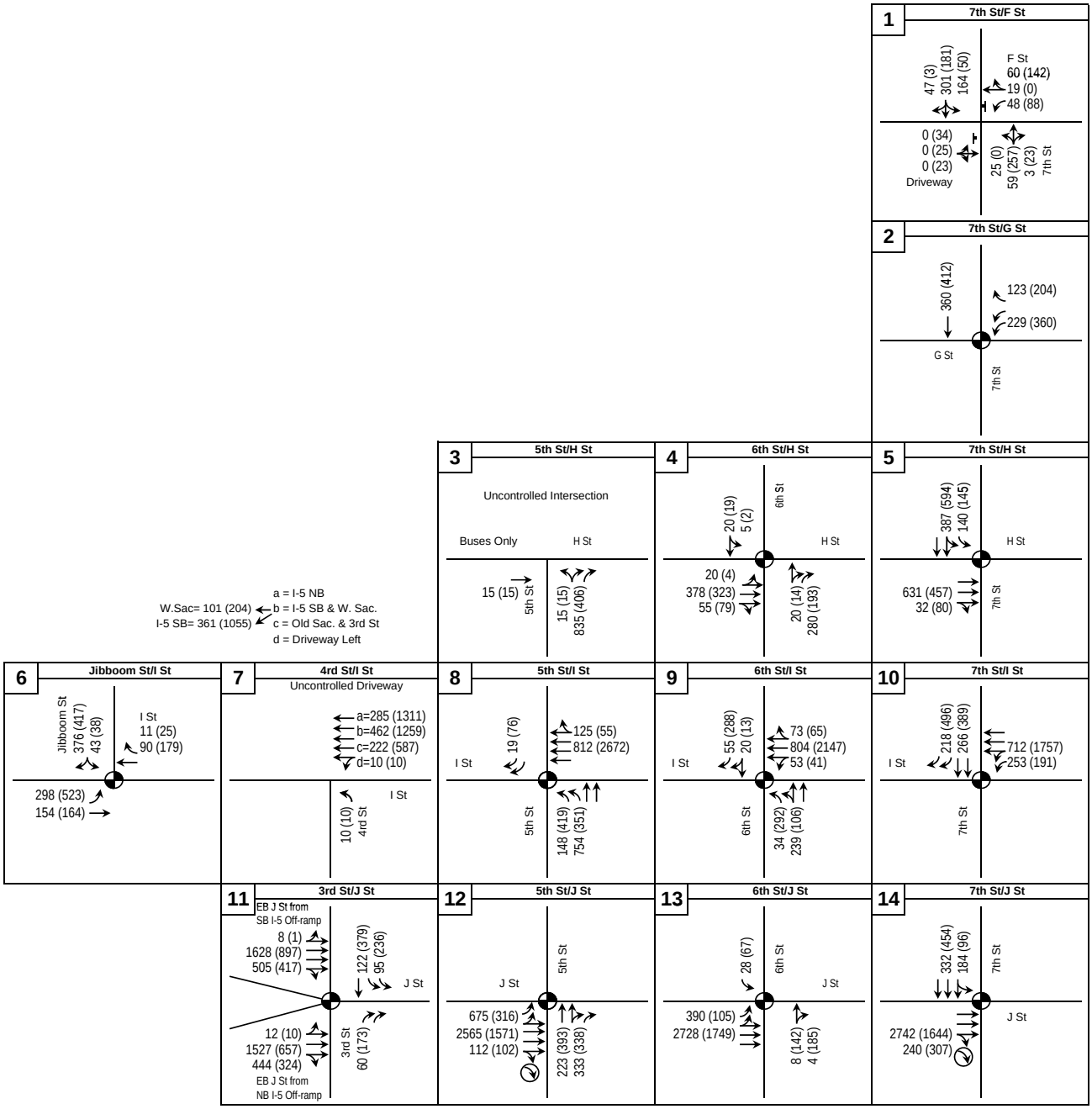
Figure 2
TRAFFIC VOLUMES ADDED BY BASELINE PROJECTS



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

= Lane provided during AM peak, only

= Lane provided during PM peak, only

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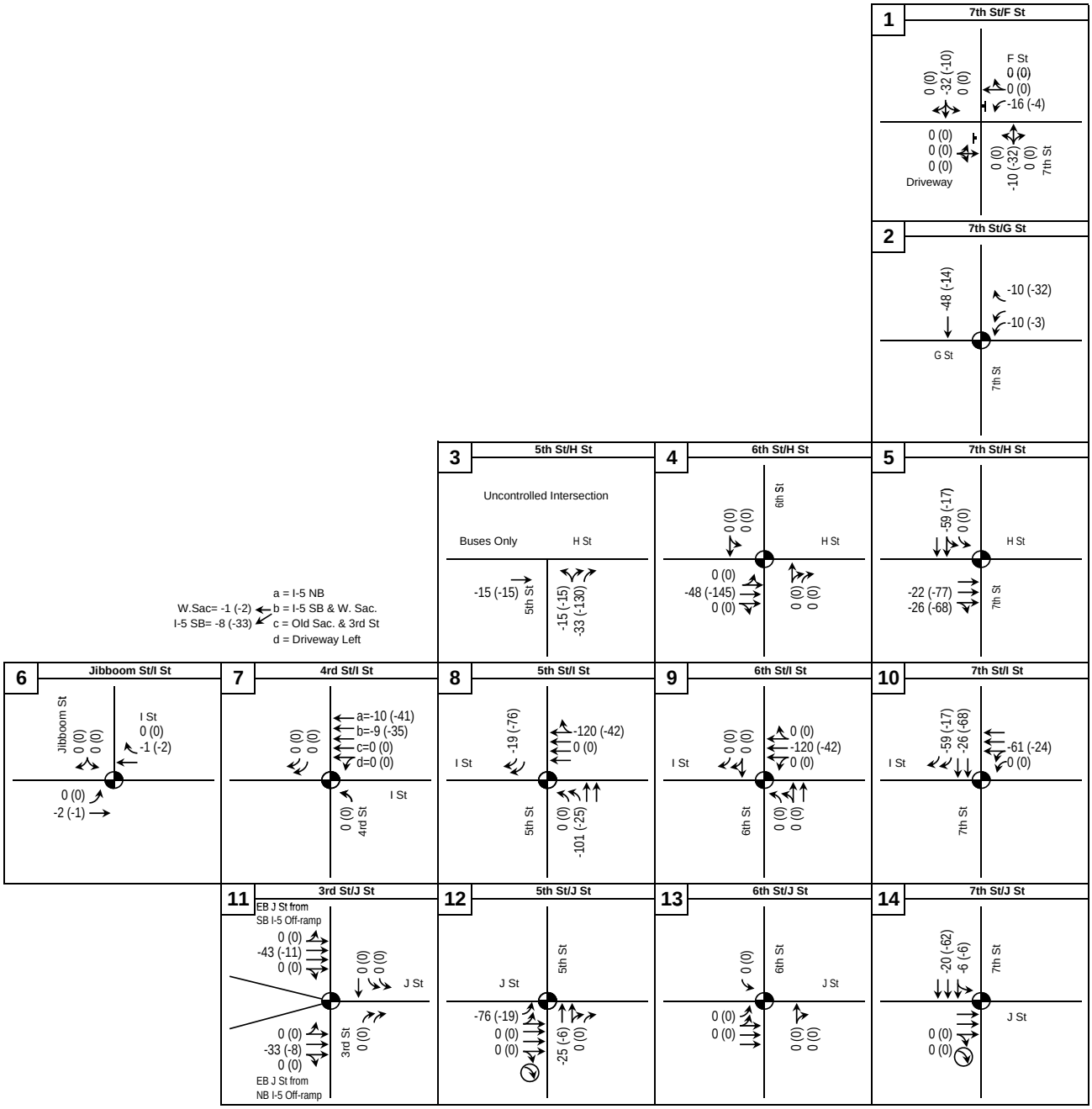
Figure 3

BASELINE TRAFFIC VOLUMES, LANES, AND TRAFFIC CONTROLS



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

= Lane provided during AM peak, only

= Lane provided during PM peak, only

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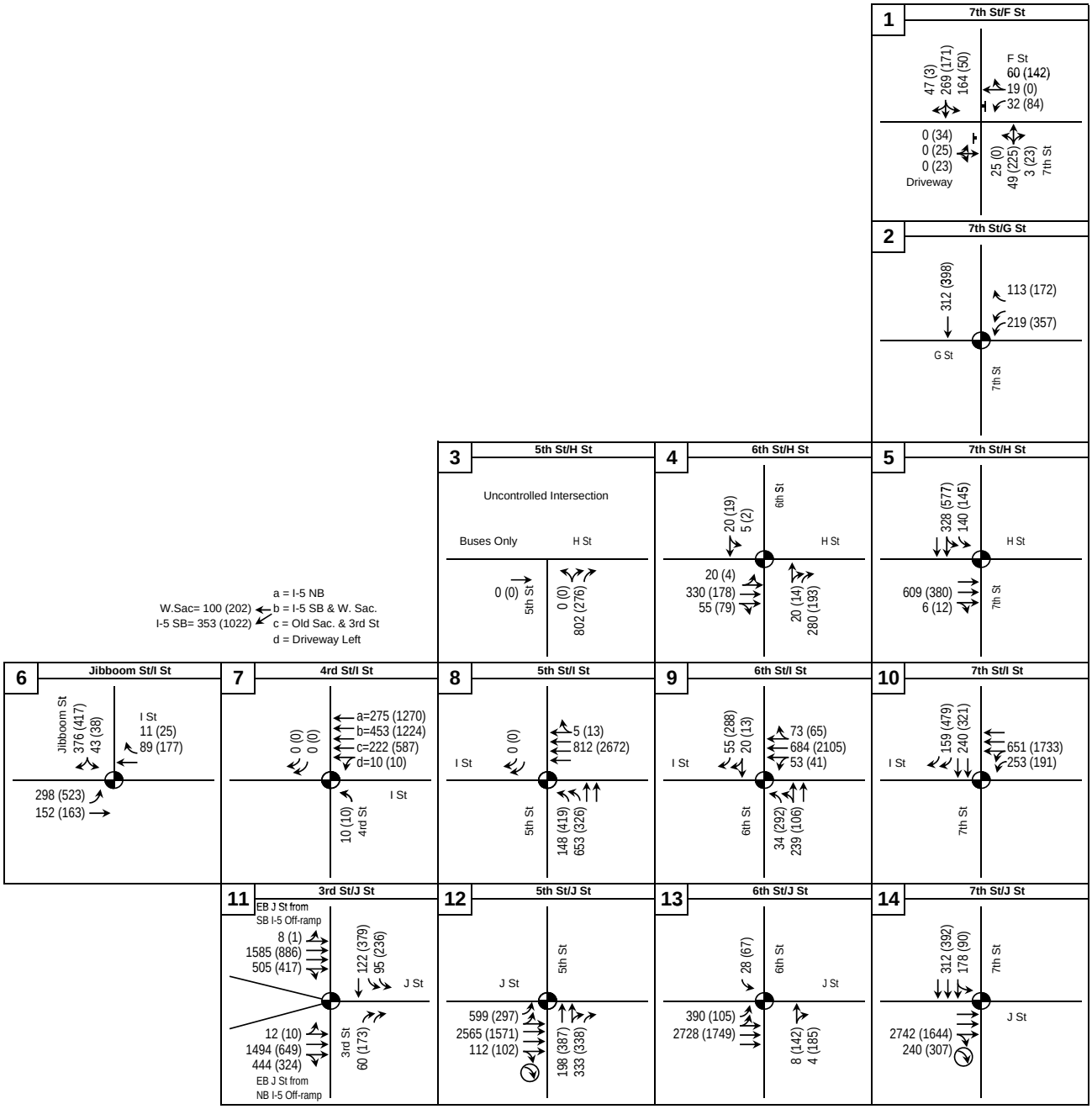
Sacramento Intermodal Transit Facility Traffic Study

Figure 4
EXISTING DEPOT TRAFFIC VOLUMES REMOVED



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

= Lane provided during AM peak, only

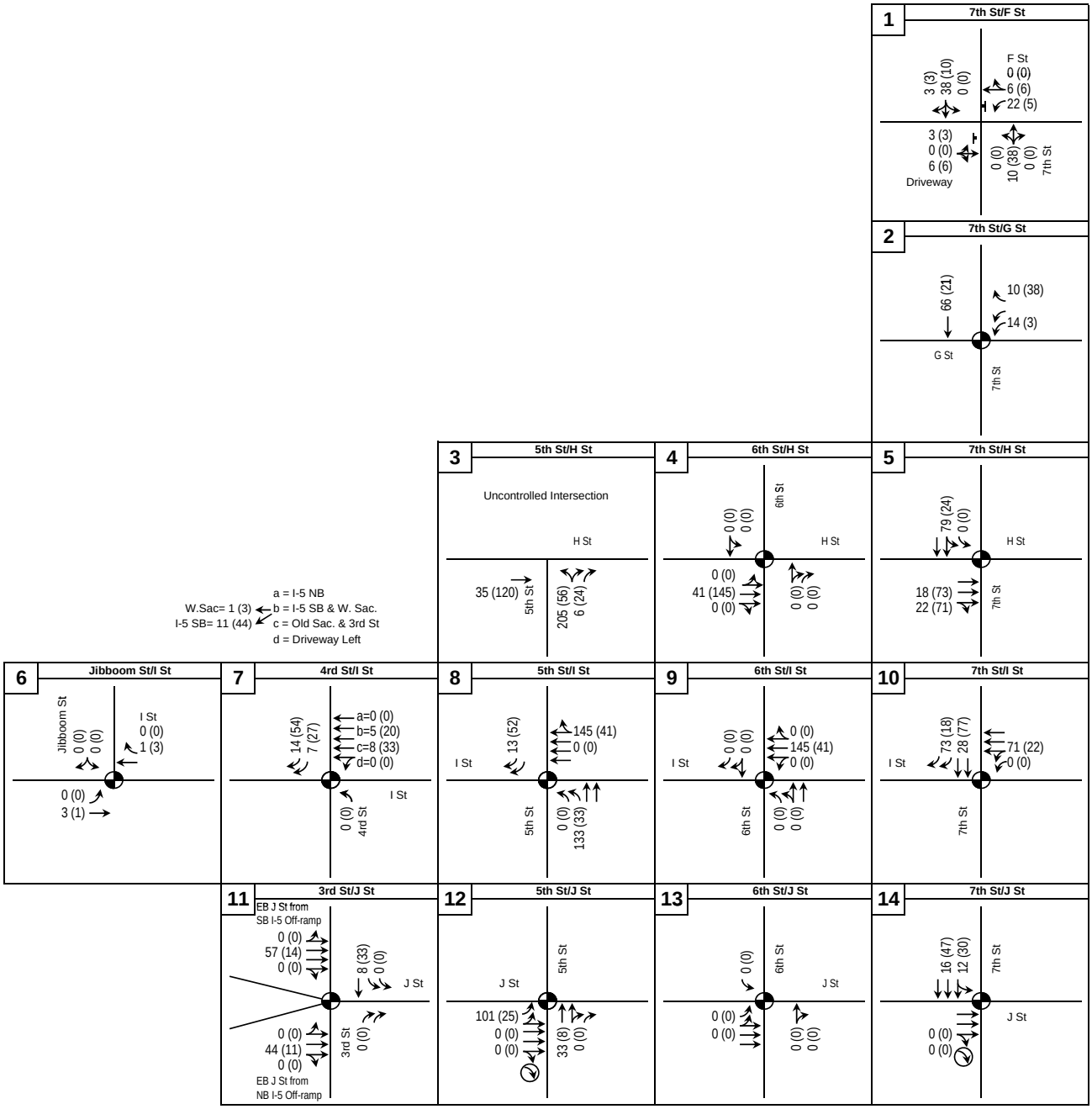
= Lane provided during PM peak, only

Dowling Associates, Inc.

Sacramento Intermodal Transit Facility Traffic Study

Figure 5

BASELINE TRAFFIC VOLUMES AFTER REMOVAL OF EXISTING DEPOT



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

= Lane provided during AM peak, only

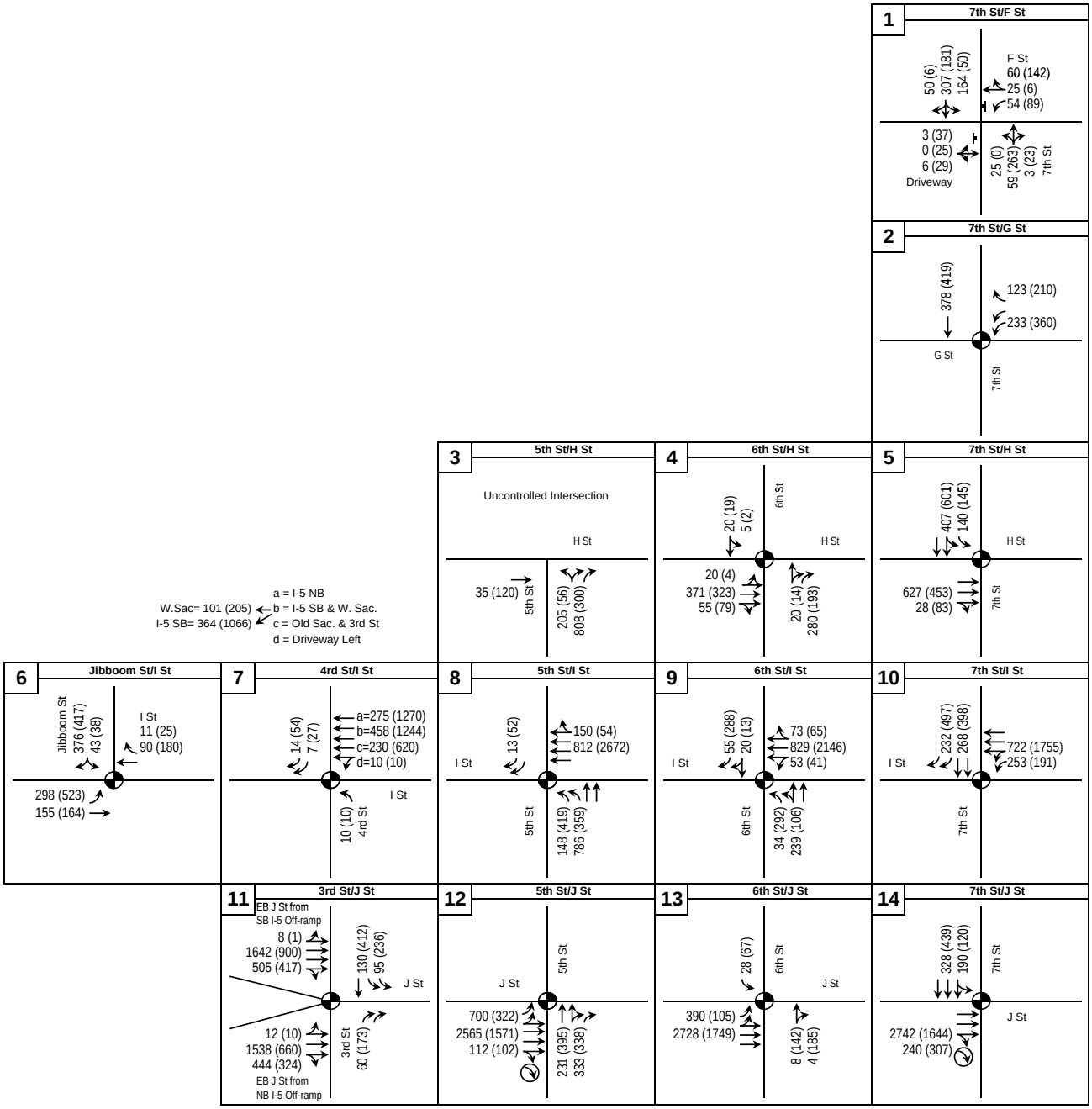
= Lane provided during PM peak, only

Dowling Associates, Inc.

Sacramento Intermodal Transit Facility Traffic Study

N W E S

Figure 6
TRAFFIC VOLUMES ADDED BY PHASE 2 PROJECT



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

= Lane provided during AM peak, only

= Lane provided during PM peak, only

Dowling Associates, Inc.

Sacramento Intermodal Transit Facility
Traffic Study

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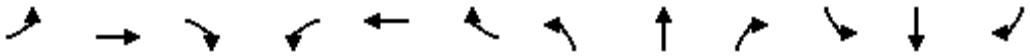
Figure 7
TRAFFIC VOLUMES AFTER
PHASE 2 PROJECT DEVELOPMENT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	48	19	60	25	59	3	164	301	47
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	0	0	48	19	60	25	59	3	164	301	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)								437				
pX, platoon unblocked												
vC, conflicting volume	832	764	324	763	786	60	348			62		
vC1, stage 1 conf vol	652	652		110	110							
vC2, stage 2 conf vol	180	112		652	676							
vCu, unblocked vol	832	764	324	763	786	60	348			62		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	95	94	98			89		
cM capacity (veh/h)	374	394	717	372	368	1005	1211			1541		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	0	48	79	87	512
Volume Left	0	48	0	25	164
Volume Right	0	0	60	3	47
cSH	1700	372	709	1211	1541
Volume to Capacity	0.00	0.13	0.11	0.02	0.11
Queue Length 95th (ft)	0	11	9	2	9
Control Delay (s)	0.0	16.1	10.7	2.4	3.1
Lane LOS	A	C	B	A	A
Approach Delay (s)	0.0	12.8		2.4	3.1
Approach LOS	A	B			

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	45.8%	ICU Level of Service		A
Analysis Period (min)	15			

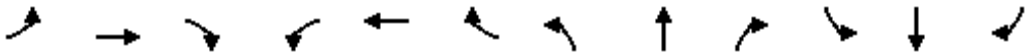
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	229	123	0	0	0	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	0.97	1.00				1.00
Frpb, ped/bikes	1.00	1.00				1.00
Flpb, ped/bikes	1.00	1.00				1.00
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	3433	1583				1863
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	3433	1583				1863
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	229	123	0	0	0	360
RTOR Reduction (vph)	133	71	0	0	0	0
Lane Group Flow (vph)	96	52	0	0	0	360
Confl. Peds. (#/hr)		72				
Turn Type		Prot				
Protected Phases	1	1				2
Permitted Phases						
Actuated Green, G (s)	21.5	21.5				21.5
Effective Green, g (s)	21.0	21.0				21.0
Actuated g/C Ratio	0.42	0.42				0.42
Clearance Time (s)	3.5	3.5				3.5
Lane Grp Cap (vph)	1442	665				782
v/s Ratio Prot	0.03	c0.03				c0.19
v/s Ratio Perm						
v/c Ratio	0.07	0.08				0.46
Uniform Delay, d1	8.7	8.7				10.4
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.1	0.2				1.9
Delay (s)	8.7	8.9				12.4
Level of Service	A	A				B
Approach Delay (s)	8.8		0.0			12.4
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	15	0	0	0	15	833
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	0	0	0	15	833
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					442	
pX, platoon unblocked						
vC, conflicting volume	863	0	38	30	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	863	0	38	30	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	95	100	100	100	99	
cM capacity (veh/h)	290	1085	923	855	1623	

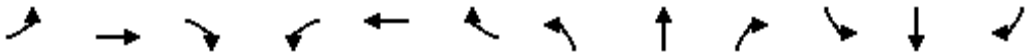
Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	15	293	555
Volume Left	0	15	0
Volume Right	0	278	555
cSH	290	1623	1700
Volume to Capacity	0.05	0.01	0.33
Queue Length 95th (ft)	4	1	0
Control Delay (s)	18.1	0.4	0.0
Lane LOS	C	A	
Approach Delay (s)	18.1	0.2	
Approach LOS	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		



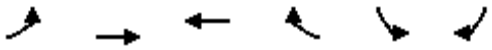
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	376	55	0	0	0	0	20	280	5	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	3.5		4.0	
Lane Util. Factor		0.91						0.95	0.95		1.00	
Frpb, ped/bikes		0.99						0.93	0.92		1.00	
Flpb, ped/bikes		0.99						1.00	1.00		0.99	
Frt		0.98						0.87	0.85		1.00	
Flt Protected		1.00						1.00	1.00		0.99	
Satd. Flow (prot)		4905						1429	1380		1823	
Flt Permitted		1.00						1.00	1.00		0.96	
Satd. Flow (perm)		4905						1429	1380		1772	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	20	376	55	0	0	0	0	20	280	5	20	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	82	90	0	0	0
Lane Group Flow (vph)	0	416	0	0	0	0	0	70	58	0	25	0
Confl. Peds. (#/hr)	72		72						72	72		
Turn Type	Perm								Perm	Perm		
Protected Phases		1						2			2	
Permitted Phases	1								2	2		
Actuated Green, G (s)		18.5						19.5	19.5		19.5	
Effective Green, g (s)		18.0						19.0	19.5		19.0	
Actuated g/C Ratio		0.36						0.38	0.39		0.38	
Clearance Time (s)		3.5						3.5	3.5		3.5	
Lane Grp Cap (vph)		1766						543	538		673	
v/s Ratio Prot								c0.05				
v/s Ratio Perm		0.08							0.04		0.01	
v/c Ratio		0.24						0.13	0.11		0.04	
Uniform Delay, d1		11.2						10.1	9.7		9.7	
Progression Factor		0.41						2.17	3.12		1.00	
Incremental Delay, d2		0.3						0.5	0.4		0.1	
Delay (s)		4.9						22.4	30.6		9.9	
Level of Service		A						C	C		A	
Approach Delay (s)		4.9			0.0			26.5			9.9	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



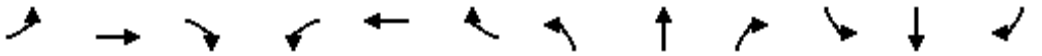
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	629	32	0	0	0	0	0	0	140	387	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.91	0.91	
Frpb, ped/bikes		1.00								1.00	1.00	
Flpb, ped/bikes		1.00								0.95	1.00	
Frt		0.99								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5033								1528	3378	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5033								1528	3378	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	629	32	0	0	0	0	0	0	140	387	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	81	5	0
Lane Group Flow (vph)	0	650	0	0	0	0	0	0	0	45	396	0
Confl. Peds. (#/hr)			72							72		
Turn Type										Perm		
Protected Phases		1									2	
Permitted Phases										2		
Actuated Green, G (s)		19.5								18.5	18.5	
Effective Green, g (s)		19.0								18.0	18.0	
Actuated g/C Ratio		0.38								0.36	0.36	
Clearance Time (s)		3.5								3.5	3.5	
Lane Grp Cap (vph)		1913								550	1216	
v/s Ratio Prot		c0.13										
v/s Ratio Perm										0.03	0.12	
v/c Ratio		0.34								0.08	0.33	
Uniform Delay, d1		11.0								10.6	11.6	
Progression Factor		0.91								2.57	1.34	
Incremental Delay, d2		0.5								0.3	0.7	
Delay (s)		10.5								27.4	16.3	
Level of Service		B								C	B	
Approach Delay (s)		10.5			0.0			0.0			18.9	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	298	154	90	11	43	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.88	
Flt Protected	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (prot)	1770	1863	1863	1583	1629	
Flt Permitted	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (perm)	1770	1863	1863	1583	1629	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	298	154	90	11	43	376
RTOR Reduction (vph)	0	0	0	6	267	0
Lane Group Flow (vph)	298	154	90	5	152	0
Turn Type	Prot			pm+ov		
Protected Phases	7	4	8	1	1	
Permitted Phases				8		
Actuated Green, G (s)	13.9	15.1	10.3	20.6	10.3	
Effective Green, g (s)	14.4	15.1	10.3	20.6	10.3	
Actuated g/C Ratio	0.31	0.32	0.22	0.44	0.22	
Clearance Time (s)	4.5	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	4.5	4.5	3.0	3.0	
Lane Grp Cap (vph)	542	599	408	829	357	
v/s Ratio Prot	c0.17	c0.08	0.05	0.00	c0.09	
v/s Ratio Perm				0.00		
v/c Ratio	0.55	0.26	0.22	0.01	0.43	
Uniform Delay, d1	13.6	11.8	15.1	7.4	15.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.4	0.5	0.0	0.8	
Delay (s)	14.5	12.2	15.5	7.4	16.6	
Level of Service	B	B	B	A	B	
Approach Delay (s)		13.7	14.6		16.6	
Approach LOS		B	B		B	

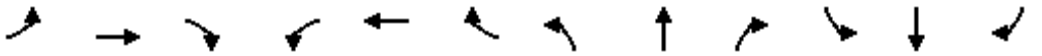
Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	803	125	148	752	0	0	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				3.5
Lane Util. Factor					0.86		0.97	0.95				0.88
Frpb, ped/bikes					0.99		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.98		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6057		3433	3362				2787
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6057		3433	3362				2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	803	125	148	752	0	0	0	19
RTOR Reduction (vph)	0	0	0	0	56	0	56	0	0	0	0	10
Lane Group Flow (vph)	0	0	0	0	872	0	92	752	0	0	0	9
Confl. Peds. (#/hr)						72						
Parking (#/hr)					0			0				
Turn Type							Split					custom
Protected Phases					1		2	2				
Permitted Phases												2
Actuated Green, G (s)					17.0		24.5	24.5				24.5
Effective Green, g (s)					18.0		24.0	24.0				24.5
Actuated g/C Ratio					0.36		0.48	0.48				0.49
Clearance Time (s)					5.0		3.5	3.5				3.5
Lane Grp Cap (vph)					2181		1648	1614				1366
v/s Ratio Prot					c0.14		0.03	c0.22				
v/s Ratio Perm												0.00
v/c Ratio					0.40		0.06	0.47				0.01
Uniform Delay, d1					12.0		6.9	8.7				6.5
Progression Factor					1.78		1.27	1.04				1.00
Incremental Delay, d2					0.5		0.1	0.8				0.0
Delay (s)					21.8		8.9	9.9				6.5
Level of Service					C		A	A				A
Approach Delay (s)		0.0			21.8			9.7			6.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

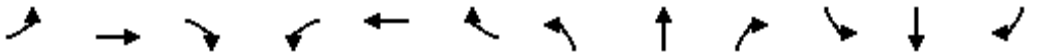
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	53	795	73	34	239	0	0	20	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.91		0.91	0.91			0.95	0.95
Frpb, ped/bikes					0.99		1.00	1.00			1.00	1.00
Flpb, ped/bikes					0.99		1.00	1.00			1.00	1.00
Frt					0.99		1.00	1.00			0.93	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4943		1610	3388			1640	1504
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					4943		1610	3388			1640	1504
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	53	795	73	34	239	0	0	20	55
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	16	31
Lane Group Flow (vph)	0	0	0	0	901	0	31	242	0	0	23	5
Confl. Peds. (#/hr)				72		72						
Turn Type				Perm			custom					custom
Protected Phases					4		1	1			2	2
Permitted Phases				4			1					2
Actuated Green, G (s)					16.5		15.5	15.5			7.5	7.5
Effective Green, g (s)					16.0		15.0	15.0			7.0	7.0
Actuated g/C Ratio					0.32		0.30	0.30			0.14	0.14
Clearance Time (s)					3.5		3.5	3.5			3.5	3.5
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					1582		483	1016			230	211
v/s Ratio Prot							0.02	c0.07			c0.01	0.00
v/s Ratio Perm					0.18							
v/c Ratio					0.57		0.06	0.24			0.10	0.02
Uniform Delay, d1					14.1		12.5	13.2			18.7	18.6
Progression Factor					1.09		1.08	1.09			1.37	2.01
Incremental Delay, d2					1.4		0.2	0.5			0.8	0.2
Delay (s)					16.8		13.7	14.8			26.6	37.5
Level of Service					B		B	B			C	D
Approach Delay (s)		0.0			16.8			14.7			31.9	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



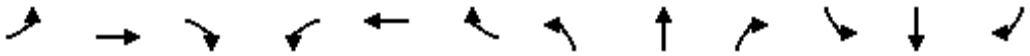
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	253	701	0	0	0	0	0	266	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.95	0.88
Frpb, ped/bikes				1.00	1.00						1.00	1.00
Flpb, ped/bikes				0.93	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1412	4786						3539	2787
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1412	4786						3539	2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	253	701	0	0	0	0	0	266	218
RTOR Reduction (vph)	0	0	0	137	7	0	0	0	0	0	0	144
Lane Group Flow (vph)	0	0	0	91	719	0	0	0	0	0	266	74
Confl. Peds. (#/hr)				72								
Turn Type				Perm								Perm
Protected Phases					1						2	
Permitted Phases				1								2
Actuated Green, G (s)				20.5	20.5						17.5	17.5
Effective Green, g (s)				20.0	20.0						17.0	17.0
Actuated g/C Ratio				0.40	0.40						0.34	0.34
Clearance Time (s)				3.5	3.5						3.5	3.5
Lane Grp Cap (vph)				565	1914						1203	948
v/s Ratio Prot											c0.08	
v/s Ratio Perm				0.06	0.15							0.03
v/c Ratio				0.16	0.38						0.22	0.08
Uniform Delay, d1				9.6	10.6						11.8	11.2
Progression Factor				1.00	1.00						0.45	0.29
Incremental Delay, d2				0.6	0.6						0.4	0.2
Delay (s)				10.2	11.2						5.7	3.3
Level of Service				B	B						A	A
Approach Delay (s)		0.0			10.9			0.0			4.7	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	NBR	SBL	SBT	NEL	NER	NER2
Lane Configurations									
Volume (vph)	8	1621	505	60	95	122	12	1527	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86		0.88	0.97	1.00	1.00	0.91	
Frpb, ped/bikes		0.99		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	
Frt		0.96		0.85	1.00	1.00	0.85	0.85	
Flt Protected		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)		6088		2787	3433	1863	1587	2882	
Flt Permitted		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (perm)		6088		2787	3433	1863	1587	2882	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	1621	505	60	95	122	12	1527	444
RTOR Reduction (vph)	0	0	0	9	0	0	0	58	0
Lane Group Flow (vph)	0	2134	0	51	95	122	669	1256	0
Confl. Peds. (#/hr)			36						36
Turn Type	Split			custom	Perm			Prot	
Protected Phases	2	2				1	3	3	
Permitted Phases				1	1				
Actuated Green, G (s)		32.9		9.9	9.9	9.9	45.7	45.7	
Effective Green, g (s)		32.9		9.4	9.4	9.4	45.7	45.7	
Actuated g/C Ratio		0.33		0.09	0.09	0.09	0.46	0.46	
Clearance Time (s)		4.0		3.5	3.5	3.5	4.0	4.0	
Vehicle Extension (s)		3.0		2.0	2.0	2.0	4.0	4.0	
Lane Grp Cap (vph)		2003		262	323	175	725	1317	
v/s Ratio Prot		c0.35				c0.07	0.42	c0.44	
v/s Ratio Perm				0.02	0.03				
v/c Ratio		1.07		0.19	0.29	0.70	0.92	0.95	
Uniform Delay, d1		33.5		41.8	42.2	43.9	25.5	26.1	
Progression Factor		1.00		1.00	0.97	0.96	1.00	1.00	
Incremental Delay, d2		40.2		0.1	0.2	9.2	17.5	15.2	
Delay (s)		73.7		41.9	41.0	51.4	43.0	41.3	
Level of Service		E		D	D	D	D	D	
Approach Delay (s)		73.7				46.8	41.9		
Approach LOS		E				D	D		

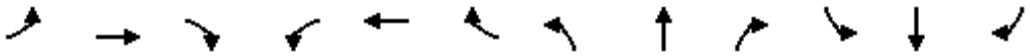
Intersection Summary			
HCM Average Control Delay	57.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



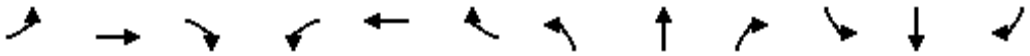
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	673	2564	112	0	0	0	0	221	333	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.76	0.81					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.93					0.97	0.94			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.94	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	5650	1196					3093	1351			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	5650	1196					3093	1351			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	673	2564	112	0	0	0	0	221	333	0	0	0
RTOR Reduction (vph)	120	2	26	0	0	0	0	1	1	0	0	0
Lane Group Flow (vph)	486	2640	75	0	0	0	0	380	172	0	0	0
Confl. Peds. (#/hr)	36		36						36			
Parking (#/hr)	0											
Turn Type	Split		Perm						Perm			
Protected Phases	1	1						2				
Permitted Phases			1						2			
Actuated Green, G (s)	70.5	70.5	70.5					21.5	21.5			
Effective Green, g (s)	70.5	70.5	70.5					21.5	21.5			
Actuated g/C Ratio	0.70	0.70	0.70					0.22	0.22			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Vehicle Extension (s)	0.2	0.2	0.2					0.2	0.2			
Lane Grp Cap (vph)	909	3983	843					665	290			
v/s Ratio Prot	0.38	c0.47						0.12				
v/s Ratio Perm			0.06						c0.13			
v/c Ratio	0.53	0.66	0.09					0.57	0.59			
Uniform Delay, d1	7.0	8.2	4.6					35.1	35.3			
Progression Factor	1.03	0.93	0.86					1.00	1.00			
Incremental Delay, d2	0.7	0.3	0.1					0.7	2.2			
Delay (s)	7.9	7.9	4.1					35.9	37.5			
Level of Service	A	A	A					D	D			
Approach Delay (s)		7.8			0.0			36.4			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



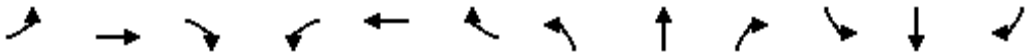
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	390	2715	0	0	0	0	0	8	4	28	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0		
Lane Util. Factor	0.86	0.86						1.00		1.00		
Frpb, ped/bikes	1.00	1.00						0.98		1.00		
Flpb, ped/bikes	0.92	1.00						1.00		0.94		
Frt	1.00	1.00						0.95		1.00		
Flt Protected	0.95	1.00						1.00		0.95		
Satd. Flow (prot)	1404	4797						1737		1665		
Flt Permitted	0.95	1.00						1.00		0.75		
Satd. Flow (perm)	1404	4797						1737		1314		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	390	2715	0	0	0	0	0	8	4	28	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	351	2754	0	0	0	0	0	9	0	28	0	0
Confl. Peds. (#/hr)	36								36	36		
Turn Type	Perm									D.Pm		
Protected Phases		1						2				
Permitted Phases	1							2		2		
Actuated Green, G (s)	71.5	71.5						21.5		21.5		
Effective Green, g (s)	71.0	71.0						21.0		21.0		
Actuated g/C Ratio	0.71	0.71						0.21		0.21		
Clearance Time (s)	3.5	3.5						3.5		3.5		
Lane Grp Cap (vph)	997	3406						365		276		
v/s Ratio Prot								0.01				
v/s Ratio Perm	0.25	0.57								c0.02		
v/c Ratio	0.35	0.81						0.02		0.10		
Uniform Delay, d1	5.6	9.9						31.4		31.9		
Progression Factor	0.86	0.98						1.00		1.08		
Incremental Delay, d2	0.8	1.8						0.1		0.7		
Delay (s)	5.6	11.5						31.5		35.2		
Level of Service	A	B						C		D		
Approach Delay (s)		10.8			0.0			31.5			35.2	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2718	240	0	0	0	0	0	0	184	332	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0								4.0	
Lane Util. Factor		0.86	0.86								0.91	
Frpb, ped/bikes		1.00	0.92								1.00	
Flpb, ped/bikes		1.00	1.00								0.97	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.98	
Satd. Flow (prot)		4796	1249								4868	
Flt Permitted		1.00	1.00								0.98	
Satd. Flow (perm)		4796	1249								4868	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2718	240	0	0	0	0	0	0	184	332	0
RTOR Reduction (vph)	0	1	37	0	0	0	0	0	0	0	100	0
Lane Group Flow (vph)	0	2741	179	0	0	0	0	0	0	0	416	0
Confl. Peds. (#/hr)			36							36		
Turn Type			Perm							Perm		
Protected Phases		1									2	
Permitted Phases			1							2		
Actuated Green, G (s)		54.5	54.5								28.5	
Effective Green, g (s)		54.0	54.0								28.0	
Actuated g/C Ratio		0.54	0.54								0.28	
Clearance Time (s)		3.5	3.5								3.5	
Lane Grp Cap (vph)		2590	674								1363	
v/s Ratio Prot		c0.57										
v/s Ratio Perm			0.14								0.09	
v/c Ratio		1.06	0.27								0.31	
Uniform Delay, d1		23.0	12.3								28.3	
Progression Factor		0.45	0.26								0.96	
Incremental Delay, d2		32.8	0.6								0.6	
Delay (s)		43.2	3.9								27.7	
Level of Service		D	A								C	
Approach Delay (s)		40.3			0.0			0.0			27.7	
Approach LOS		D			A			A			C	

Intersection Summary			
HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	25	23	88	0	142	0	257	23	50	160	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	34	25	23	88	0	142	0	257	23	50	160	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)								437				
pX, platoon unblocked												
vC, conflicting volume	672	542	162	566	532	268	163			280		
vC1, stage 1 conf vol	262	262		268	268							
vC2, stage 2 conf vol	410	280		297	263							
vCu, unblocked vol	672	542	162	566	532	268	163			280		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	96	97	85	100	82	100			96		
cM capacity (veh/h)	428	560	883	571	581	770	1416			1283		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	82	88	142	280	213
Volume Left	34	88	0	0	50
Volume Right	23	0	142	23	3
cSH	546	571	770	1416	1283
Volume to Capacity	0.15	0.15	0.18	0.00	0.04
Queue Length 95th (ft)	13	14	17	0	3
Control Delay (s)	12.7	12.5	10.7	0.0	2.1
Lane LOS	B	B	B		A
Approach Delay (s)	12.7	11.4		0.0	2.1
Approach LOS	B	B			

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	53.0%	ICU Level of Service		A
Analysis Period (min)	15			

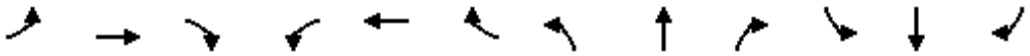
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	360	204	0	0	0	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	0.97	1.00				1.00
Frpb, ped/bikes	1.00	1.00				1.00
Flpb, ped/bikes	1.00	1.00				1.00
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	3433	1583				1863
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	3433	1583				1863
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	360	204	0	0	0	391
RTOR Reduction (vph)	209	118	0	0	0	0
Lane Group Flow (vph)	151	86	0	0	0	391
Confl. Peds. (#/hr)		72				
Turn Type		Prot				
Protected Phases	1	1				2
Permitted Phases						
Actuated Green, G (s)	21.5	21.5				21.5
Effective Green, g (s)	21.0	21.0				21.0
Actuated g/C Ratio	0.42	0.42				0.42
Clearance Time (s)	3.5	3.5				3.5
Lane Grp Cap (vph)	1442	665				782
v/s Ratio Prot	0.04	c0.05				c0.21
v/s Ratio Perm						
v/c Ratio	0.10	0.13				0.50
Uniform Delay, d1	8.8	8.9				10.6
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.1	0.4				2.3
Delay (s)	8.9	9.3				12.9
Level of Service	A	A				B
Approach Delay (s)	9.1		0.0			12.9
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	15	0	0	0	15	402
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	0	0	0	15	402
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					442	
pX, platoon unblocked						
vC, conflicting volume	432	0	38	30	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	432	0	38	30	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	97	100	100	100	99	
cM capacity (veh/h)	512	1085	939	855	1623	

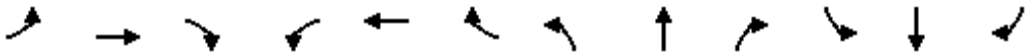
Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	15	149	268
Volume Left	0	15	0
Volume Right	0	134	268
cSH	512	1623	1700
Volume to Capacity	0.03	0.01	0.16
Queue Length 95th (ft)	2	1	0
Control Delay (s)	12.2	0.8	0.0
Lane LOS	B	A	
Approach Delay (s)	12.2	0.3	
Approach LOS	B		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		



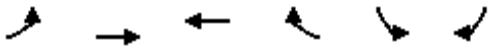
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	319	79	0	0	0	0	14	193	2	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	3.5		4.0	
Lane Util. Factor		0.91						0.95	0.95		1.00	
Frpb, ped/bikes		0.98						0.93	0.92		1.00	
Flpb, ped/bikes		1.00						1.00	1.00		0.99	
Frt		0.97						0.87	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		4847						1429	1380		1843	
Flt Permitted		1.00						1.00	1.00		0.98	
Satd. Flow (perm)		4847						1429	1380		1822	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	319	79	0	0	0	0	14	193	2	19	0
RTOR Reduction (vph)	0	44	0	0	0	0	0	64	70	0	0	0
Lane Group Flow (vph)	0	358	0	0	0	0	0	41	32	0	21	0
Confl. Peds. (#/hr)	72		72						72	72		
Turn Type	Perm								Perm	Perm		
Protected Phases		1						2			2	
Permitted Phases	1								2	2		
Actuated Green, G (s)		22.5						15.5	15.5		15.5	
Effective Green, g (s)		22.0						15.0	15.5		15.0	
Actuated g/C Ratio		0.44						0.30	0.31		0.30	
Clearance Time (s)		3.5						3.5	3.5		3.5	
Lane Grp Cap (vph)		2133						429	428		547	
v/s Ratio Prot								c0.03				
v/s Ratio Perm		0.07							0.02		0.01	
v/c Ratio		0.17						0.10	0.07		0.04	
Uniform Delay, d1		8.5						12.6	12.2		12.4	
Progression Factor		0.28						0.64	0.67		1.00	
Incremental Delay, d2		0.2						0.4	0.3		0.1	
Delay (s)		2.5						8.5	8.5		12.5	
Level of Service		A						A	A		B	
Approach Delay (s)		2.5			0.0			8.5			12.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



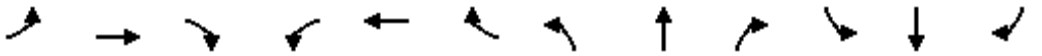
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	453	80	0	0	0	0	0	0	145	573	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.91	0.91	
Frpb, ped/bikes		0.99								1.00	1.00	
Flpb, ped/bikes		1.00								0.93	1.00	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4909								1494	3380	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4909								1494	3380	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	453	80	0	0	0	0	0	0	145	573	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	0	0	83	3	0
Lane Group Flow (vph)	0	483	0	0	0	0	0	0	0	47	585	0
Confl. Peds. (#/hr)			72							72		
Turn Type										Perm		
Protected Phases		1									2	
Permitted Phases										2		
Actuated Green, G (s)		19.5								18.5	18.5	
Effective Green, g (s)		19.0								18.0	18.0	
Actuated g/C Ratio		0.38								0.36	0.36	
Clearance Time (s)		3.5								3.5	3.5	
Lane Grp Cap (vph)		1865								538	1217	
v/s Ratio Prot		c0.10										
v/s Ratio Perm										0.03	0.17	
v/c Ratio		0.26								0.09	0.48	
Uniform Delay, d1		10.7								10.6	12.4	
Progression Factor		0.55								2.20	1.28	
Incremental Delay, d2		0.3								0.3	1.3	
Delay (s)		6.2								23.6	17.2	
Level of Service		A								C	B	
Approach Delay (s)		6.2			0.0			0.0			18.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



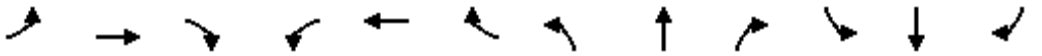
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	523	164	179	25	38	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.88	
Flt Protected	0.95	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1770	1863	1863	1583	1625	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1770	1863	1863	1583	1625	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	523	164	179	25	38	417
RTOR Reduction (vph)	0	0	0	17	359	0
Lane Group Flow (vph)	523	164	179	8	96	0
Turn Type	Prot			pm+ov		
Protected Phases	7	4	8	1	1	
Permitted Phases				8		
Actuated Green, G (s)	35.9	40.9	13.7	23.8	10.1	
Effective Green, g (s)	36.4	40.9	13.7	23.8	10.1	
Actuated g/C Ratio	0.50	0.57	0.19	0.33	0.14	
Clearance Time (s)	4.5	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	4.5	4.5	3.0	3.0	
Lane Grp Cap (vph)	892	1055	354	610	227	
v/s Ratio Prot	c0.30	0.09	c0.10	0.00	c0.06	
v/s Ratio Perm				0.00		
v/c Ratio	0.59	0.16	0.51	0.01	0.42	
Uniform Delay, d1	12.6	7.4	26.2	16.3	28.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.1	2.0	0.0	1.3	
Delay (s)	13.4	7.6	28.2	16.3	29.7	
Level of Service	B	A	C	B	C	
Approach Delay (s)		12.0	26.7		29.7	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	2640	55	419	347	0	0	0	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				3.5
Lane Util. Factor					0.86		0.97	0.95				0.88
Frpb, ped/bikes					1.00		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					1.00		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6213		3433	3362				2787
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6213		3433	3362				2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2640	55	419	347	0	0	0	76
RTOR Reduction (vph)	0	0	0	0	3	0	3	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	2692	0	416	347	0	0	0	75
Confl. Peds. (#/hr)	72					72			144	144		
Confl. Bikes (#/hr)			10						10			
Parking (#/hr)					0			0				
Turn Type							Split					custom
Protected Phases					1		2	2				
Permitted Phases												2
Actuated Green, G (s)					57.0		34.5	34.5				34.5
Effective Green, g (s)					58.0		34.0	34.0				34.5
Actuated g/C Ratio					0.58		0.34	0.34				0.34
Clearance Time (s)					5.0		3.5	3.5				3.5
Lane Grp Cap (vph)					3604		1167	1143				962
v/s Ratio Prot					c0.43		c0.12	0.10				
v/s Ratio Perm												0.03
v/c Ratio					0.75		0.36	0.30				0.08
Uniform Delay, d1					15.6		24.8	24.3				22.0
Progression Factor					0.36		0.95	0.95				1.00
Incremental Delay, d2					0.7		0.8	0.7				0.2
Delay (s)					6.3		24.3	23.6				22.2
Level of Service					A		C	C				C
Approach Delay (s)		0.0			6.3			24.0			22.2	
Approach LOS		A			A			C			C	

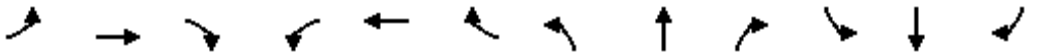
Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	41	2115	65	292	106	0	0	13	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.86		1.00	0.95			0.95	0.95
Frpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			0.86	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					6316		1770	3539			1527	1504
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					6316		1770	3539			1527	1504
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	41	2115	65	292	106	0	0	13	288
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	83	83
Lane Group Flow (vph)	0	0	0	0	2217	0	292	106	0	0	68	67
Confl. Peds. (#/hr)	72		72	72		72			72	72		
Confl. Bikes (#/hr)						10			10			
Parking (#/hr)				5		5						
Turn Type				Perm			custom					custom
Protected Phases					4		1	1			2	2
Permitted Phases				4			1					2
Actuated Green, G (s)					37.3		27.1	27.1			25.1	25.1
Effective Green, g (s)					36.8		26.6	26.6			24.6	24.6
Actuated g/C Ratio					0.37		0.27	0.27			0.25	0.25
Clearance Time (s)					3.5		3.5	3.5			3.5	3.5
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					2324		471	941			376	370
v/s Ratio Prot							c0.17	0.03			0.04	c0.04
v/s Ratio Perm					0.35							
v/c Ratio					0.95		0.62	0.11			0.18	0.18
Uniform Delay, d1					30.8		32.3	27.8			29.8	29.8
Progression Factor					0.55		0.99	1.00			0.65	0.65
Incremental Delay, d2					8.1		5.9	0.2			1.1	1.1
Delay (s)					25.1		37.7	27.9			20.3	20.3
Level of Service					C		D	C			C	C
Approach Delay (s)		0.0			25.1			35.1			20.3	
Approach LOS		A			C			D			C	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	191	1725	0	0	0	0	0	358	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.95	0.88
Frpb, ped/bikes				1.00	1.00						1.00	0.84
Flpb, ped/bikes				0.86	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1303	4796						3539	2346
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1303	4796						3539	2346
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	191	1725	0	0	0	0	0	358	496
RTOR Reduction (vph)	0	0	0	47	1	0	0	0	0	0	0	184
Lane Group Flow (vph)	0	0	0	125	1743	0	0	0	0	0	358	312
Confl. Peds. (#/hr)	72		72	72		72	72		72	72		72
Confl. Bikes (#/hr)						10						10
Turn Type				Perm								Perm
Protected Phases					1						2	
Permitted Phases				1								2
Actuated Green, G (s)				48.5	48.5						34.5	34.5
Effective Green, g (s)				48.0	48.0						34.0	34.0
Actuated g/C Ratio				0.48	0.48						0.34	0.34
Clearance Time (s)				3.5	3.5						3.5	3.5
Lane Grp Cap (vph)				625	2302						1203	798
v/s Ratio Prot											0.10	
v/s Ratio Perm				0.10	0.36							c0.13
v/c Ratio				0.20	0.76						0.30	0.39
Uniform Delay, d1				15.0	21.2						24.2	25.1
Progression Factor				1.00	1.00						0.78	0.72
Incremental Delay, d2				0.7	2.4						0.6	1.4
Delay (s)				15.7	23.6						19.5	19.3
Level of Service				B	C						B	B
Approach Delay (s)		0.0			22.9			0.0			19.4	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

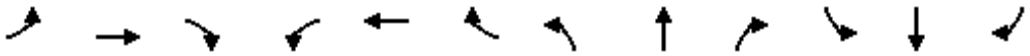
c Critical Lane Group

Movement	EBL	EBT	EBR	NBR	SBL	SBT	NEL	NER	NER2
Lane Configurations									
Volume (vph)	1	873	417	172	236	379	10	657	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86		0.88	0.97	1.00	1.00	0.91	
Frpb, ped/bikes		0.98		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	
Frt		0.95		0.85	1.00	1.00	0.85	0.85	
Flt Protected		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)		6005		2787	3433	1863	1589	2882	
Flt Permitted		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (perm)		6005		2787	3433	1863	1589	2882	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	873	417	172	236	379	10	657	324
RTOR Reduction (vph)	0	0	0	45	0	0	0	106	0
Lane Group Flow (vph)	0	1291	0	127	236	379	332	553	0
Confl. Peds. (#/hr)			36						36
Turn Type	Split			custom	Perm			Prot	
Protected Phases	2	2				1	3	3	
Permitted Phases				1	1				
Actuated Green, G (s)		21.0		15.9	15.9	15.9	21.0	21.0	
Effective Green, g (s)		21.0		15.4	15.4	15.4	21.0	21.0	
Actuated g/C Ratio		0.30		0.22	0.22	0.22	0.30	0.30	
Clearance Time (s)		4.0		3.5	3.5	3.5	4.0	4.0	
Vehicle Extension (s)		3.0		2.0	2.0	2.0	4.0	4.0	
Lane Grp Cap (vph)		1817		618	762	413	481	872	
v/s Ratio Prot		c0.22				c0.20	c0.21	0.19	
v/s Ratio Perm				0.05	0.07				
v/c Ratio		0.87dr		0.21	0.31	0.92	0.69	0.63	
Uniform Delay, d1		21.5		22.0	22.6	26.4	21.3	20.9	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4		0.1	0.1	24.5	4.6	1.7	
Delay (s)		23.9		22.1	22.6	50.9	25.9	22.6	
Level of Service		C		C	C	D	C	C	
Approach Delay (s)		23.9				40.0	23.7		
Approach LOS		C				D	C		

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

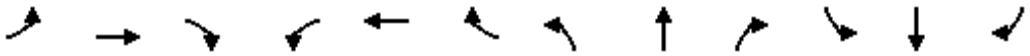
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



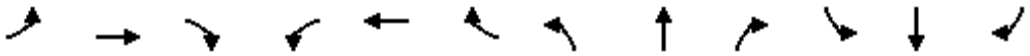
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	316	1519	102	0	0	0	0	389	338	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0	4.0			
Lane Util. Factor	0.81	0.81						0.91	0.91			
Frpb, ped/bikes	1.00	1.00						0.99	0.96			
Flpb, ped/bikes	1.00	1.00						1.00	1.00			
Frt	1.00	0.99						0.97	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1290	5949						3246	1387			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1290	5949						3246	1387			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	316	1519	102	0	0	0	0	389	338	0	0	0
RTOR Reduction (vph)	165	23	0	0	0	0	0	3	3	0	0	0
Lane Group Flow (vph)	119	1630	0	0	0	0	0	501	220	0	0	0
Confl. Peds. (#/hr)	36		36						36			
Parking (#/hr)	0											
Turn Type	Split								Perm			
Protected Phases	1	1						2				
Permitted Phases									2			
Actuated Green, G (s)	21.0	21.0						21.0	21.0			
Effective Green, g (s)	21.0	21.0						21.0	21.0			
Actuated g/C Ratio	0.42	0.42						0.42	0.42			
Clearance Time (s)	4.0	4.0						4.0	4.0			
Vehicle Extension (s)	0.2	0.2						0.2	0.2			
Lane Grp Cap (vph)	542	2499						1363	583			
v/s Ratio Prot	0.09	c0.27						0.15				
v/s Ratio Perm									c0.16			
v/c Ratio	0.22	0.65						0.37	0.38			
Uniform Delay, d1	9.3	11.6						9.9	10.0			
Progression Factor	1.00	1.00						1.00	1.00			
Incremental Delay, d2	0.9	1.3						0.1	0.1			
Delay (s)	10.2	12.9						10.0	10.1			
Level of Service	B	B						B	B			
Approach Delay (s)		12.5			0.0			10.0			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



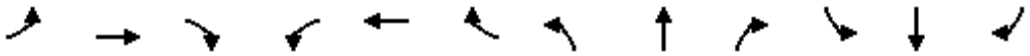
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	1703	0	0	0	0	0	142	185	67	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0		
Lane Util. Factor	0.86	0.86						1.00		1.00		
Frpb, ped/bikes	1.00	1.00						0.98		1.00		
Flpb, ped/bikes	0.96	1.00						1.00		0.98		
Frt	1.00	1.00						0.92		1.00		
Flt Protected	0.95	1.00						1.00		0.95		
Satd. Flow (prot)	1463	4803						1680		1739		
Flt Permitted	0.95	1.00						1.00		0.47		
Satd. Flow (perm)	1463	4803						1680		853		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	1703	0	0	0	0	0	142	185	67	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	94	1714	0	0	0	0	0	322	0	67	0	0
Confl. Peds. (#/hr)	36								36	36		
Turn Type	Perm									D.Pm		
Protected Phases		1						2				
Permitted Phases	1							2		2		
Actuated Green, G (s)	24.5	24.5						18.5		18.5		
Effective Green, g (s)	24.0	24.0						18.0		18.0		
Actuated g/C Ratio	0.48	0.48						0.36		0.36		
Clearance Time (s)	3.5	3.5						3.5		3.5		
Lane Grp Cap (vph)	702	2305						605		307		
v/s Ratio Prot								c0.19				
v/s Ratio Perm	0.06	0.36								0.08		
v/c Ratio	0.13	0.74						0.53		0.22		
Uniform Delay, d1	7.2	10.5						12.7		11.1		
Progression Factor	0.43	0.36						1.00		1.23		
Incremental Delay, d2	0.3	1.8						3.3		1.2		
Delay (s)	3.4	5.6						16.0		14.9		
Level of Service	A	A						B		B		
Approach Delay (s)		5.5			0.0			16.0			14.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1604	307	0	0	0	0	0	0	96	437	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		4925									5007	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		4925									5007	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1604	307	0	0	0	0	0	0	96	437	0
RTOR Reduction (vph)	0	56	0	0	0	0	0	0	0	0	65	0
Lane Group Flow (vph)	0	1855	0	0	0	0	0	0	0	0	468	0
Confl. Peds. (#/hr)			36							36		
Turn Type										Perm		
Protected Phases		1									2	
Permitted Phases										2		
Actuated Green, G (s)		21.5									16.5	
Effective Green, g (s)		21.0									16.0	
Actuated g/C Ratio		0.42									0.32	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		2069									1602	
v/s Ratio Prot		c0.38										
v/s Ratio Perm											0.09	
v/c Ratio		0.90									0.29	
Uniform Delay, d1		13.5									12.8	
Progression Factor		0.46									1.06	
Incremental Delay, d2		4.7									0.4	
Delay (s)		10.9									13.9	
Level of Service		B									B	
Approach Delay (s)		10.9			0.0			0.0			13.9	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	48	19	60	25	59	3	164	301	47
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	0	0	48	19	60	25	59	3	164	301	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)								437				
pX, platoon unblocked												
vC, conflicting volume	832	764	324	763	786	60	348			62		
vC1, stage 1 conf vol	652	652		110	110							
vC2, stage 2 conf vol	180	112		652	676							
vCu, unblocked vol	832	764	324	763	786	60	348			62		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	95	94	98			89		
cM capacity (veh/h)	374	394	717	372	368	1005	1211			1541		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	0	48	79	87	512
Volume Left	0	48	0	25	164
Volume Right	0	0	60	3	47
cSH	1700	372	709	1211	1541
Volume to Capacity	0.00	0.13	0.11	0.02	0.11
Queue Length 95th (ft)	0	11	9	2	9
Control Delay (s)	0.0	16.1	10.7	2.4	3.1
Lane LOS	A	C	B	A	A
Approach Delay (s)	0.0	12.8		2.4	3.1
Approach LOS	A	B			

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	45.8%	ICU Level of Service		A
Analysis Period (min)	15			

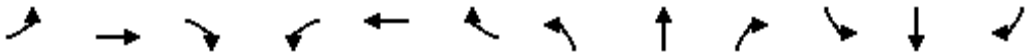
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	229	123	0	0	0	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	0.97	1.00				1.00
Frpb, ped/bikes	1.00	1.00				1.00
Flpb, ped/bikes	1.00	1.00				1.00
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	3433	1583				1863
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	3433	1583				1863
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	229	123	0	0	0	360
RTOR Reduction (vph)	133	71	0	0	0	0
Lane Group Flow (vph)	96	52	0	0	0	360
Confl. Peds. (#/hr)		72				
Turn Type		Prot				
Protected Phases	1	1				2
Permitted Phases						
Actuated Green, G (s)	21.5	21.5				21.5
Effective Green, g (s)	21.0	21.0				21.0
Actuated g/C Ratio	0.42	0.42				0.42
Clearance Time (s)	3.5	3.5				3.5
Lane Grp Cap (vph)	1442	665				782
v/s Ratio Prot	0.03	c0.03				c0.19
v/s Ratio Perm						
v/c Ratio	0.07	0.08				0.46
Uniform Delay, d1	8.7	8.7				10.4
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.1	0.2				1.9
Delay (s)	8.7	8.9				12.4
Level of Service	A	A				B
Approach Delay (s)	8.8		0.0			12.4
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	15	0	0	0	15	835
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	0	0	0	15	835
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					442	
pX, platoon unblocked						
vC, conflicting volume	865	0	38	30	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	865	0	38	30	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	95	100	100	100	99	
cM capacity (veh/h)	289	1085	923	855	1623	

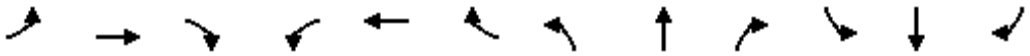
Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	15	293	557
Volume Left	0	15	0
Volume Right	0	278	557
cSH	289	1623	1700
Volume to Capacity	0.05	0.01	0.33
Queue Length 95th (ft)	4	1	0
Control Delay (s)	18.1	0.4	0.0
Lane LOS	C	A	
Approach Delay (s)	18.1	0.2	
Approach LOS	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		



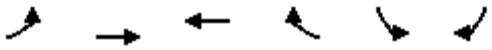
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	378	55	0	0	0	0	20	280	5	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	3.5		4.0	
Lane Util. Factor		0.91						0.95	0.95		1.00	
Frpb, ped/bikes		0.99						0.93	0.92		1.00	
Flpb, ped/bikes		0.99						1.00	1.00		0.99	
Frt		0.98						0.87	0.85		1.00	
Flt Protected		1.00						1.00	1.00		0.99	
Satd. Flow (prot)		4906						1429	1380		1823	
Flt Permitted		1.00						1.00	1.00		0.96	
Satd. Flow (perm)		4906						1429	1380		1772	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	20	378	55	0	0	0	0	20	280	5	20	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	82	90	0	0	0
Lane Group Flow (vph)	0	418	0	0	0	0	0	70	58	0	25	0
Confl. Peds. (#/hr)	72		72						72	72		
Turn Type	Perm								Perm	Perm		
Protected Phases		1						2			2	
Permitted Phases	1								2	2		
Actuated Green, G (s)		18.5						19.5	19.5		19.5	
Effective Green, g (s)		18.0						19.0	19.5		19.0	
Actuated g/C Ratio		0.36						0.38	0.39		0.38	
Clearance Time (s)		3.5						3.5	3.5		3.5	
Lane Grp Cap (vph)		1766						543	538		673	
v/s Ratio Prot								c0.05				
v/s Ratio Perm		0.09							0.04		0.01	
v/c Ratio		0.24						0.13	0.11		0.04	
Uniform Delay, d1		11.2						10.1	9.7		9.7	
Progression Factor		0.41						2.17	3.12		1.00	
Incremental Delay, d2		0.3						0.5	0.4		0.1	
Delay (s)		4.9						22.4	30.6		9.9	
Level of Service		A						C	C		A	
Approach Delay (s)		4.9			0.0			26.5			9.9	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



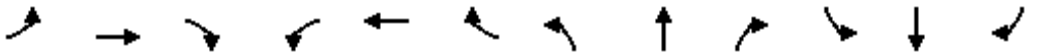
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	631	32	0	0	0	0	0	0	140	387	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.91	0.91	
Frpb, ped/bikes		1.00								1.00	1.00	
Flpb, ped/bikes		1.00								0.95	1.00	
Frt		0.99								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5033								1528	3378	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5033								1528	3378	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	631	32	0	0	0	0	0	0	140	387	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	81	5	0
Lane Group Flow (vph)	0	652	0	0	0	0	0	0	0	45	396	0
Confl. Peds. (#/hr)			72							72		
Turn Type										Perm		
Protected Phases		1									2	
Permitted Phases										2		
Actuated Green, G (s)		19.5								18.5	18.5	
Effective Green, g (s)		19.0								18.0	18.0	
Actuated g/C Ratio		0.38								0.36	0.36	
Clearance Time (s)		3.5								3.5	3.5	
Lane Grp Cap (vph)		1913								550	1216	
v/s Ratio Prot		c0.13										
v/s Ratio Perm										0.03	0.12	
v/c Ratio		0.34								0.08	0.33	
Uniform Delay, d1		11.0								10.6	11.6	
Progression Factor		0.91								2.57	1.34	
Incremental Delay, d2		0.5								0.3	0.7	
Delay (s)		10.5								27.4	16.3	
Level of Service		B								C	B	
Approach Delay (s)		10.5			0.0			0.0			18.9	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	298	154	90	11	43	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.88	
Flt Protected	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (prot)	1770	1863	1863	1583	1629	
Flt Permitted	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (perm)	1770	1863	1863	1583	1629	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	298	154	90	11	43	376
RTOR Reduction (vph)	0	0	0	6	267	0
Lane Group Flow (vph)	298	154	90	5	152	0
Turn Type	Prot			pm+ov		
Protected Phases	7	4	8	1	1	
Permitted Phases				8		
Actuated Green, G (s)	13.9	15.1	10.3	20.6	10.3	
Effective Green, g (s)	14.4	15.1	10.3	20.6	10.3	
Actuated g/C Ratio	0.31	0.32	0.22	0.44	0.22	
Clearance Time (s)	4.5	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	4.5	4.5	3.0	3.0	
Lane Grp Cap (vph)	542	599	408	829	357	
v/s Ratio Prot	c0.17	c0.08	0.05	0.00	c0.09	
v/s Ratio Perm				0.00		
v/c Ratio	0.55	0.26	0.22	0.01	0.43	
Uniform Delay, d1	13.6	11.8	15.1	7.4	15.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.4	0.5	0.0	0.8	
Delay (s)	14.5	12.2	15.5	7.4	16.6	
Level of Service	B	B	B	A	B	
Approach Delay (s)		13.7	14.6		16.6	
Approach LOS		B	B		B	

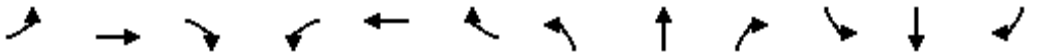
Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	812	125	148	754	0	0	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				3.5
Lane Util. Factor					0.86		0.97	0.95				0.88
Frpb, ped/bikes					0.99		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.98		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6059		3433	3362				2787
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6059		3433	3362				2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	812	125	148	754	0	0	0	19
RTOR Reduction (vph)	0	0	0	0	56	0	54	0	0	0	0	10
Lane Group Flow (vph)	0	0	0	0	881	0	94	754	0	0	0	9
Confl. Peds. (#/hr)						72						
Parking (#/hr)					0			0				
Turn Type							Split					custom
Protected Phases					1		2	2				
Permitted Phases												2
Actuated Green, G (s)					17.0		24.5	24.5				24.5
Effective Green, g (s)					18.0		24.0	24.0				24.5
Actuated g/C Ratio					0.36		0.48	0.48				0.49
Clearance Time (s)					5.0		3.5	3.5				3.5
Lane Grp Cap (vph)					2181		1648	1614				1366
v/s Ratio Prot					c0.15		0.03	c0.22				
v/s Ratio Perm												0.00
v/c Ratio					0.40		0.06	0.47				0.01
Uniform Delay, d1					12.0		7.0	8.7				6.5
Progression Factor					1.78		1.24	1.04				1.00
Incremental Delay, d2					0.5		0.1	0.8				0.0
Delay (s)					21.8		8.7	9.9				6.5
Level of Service					C		A	A				A
Approach Delay (s)		0.0			21.8			9.7			6.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

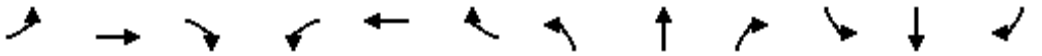
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	53	804	73	34	239	0	0	20	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.91		0.91	0.91			0.95	0.95
Frpb, ped/bikes					0.99		1.00	1.00			1.00	1.00
Flpb, ped/bikes					0.99		1.00	1.00			1.00	1.00
Frt					0.99		1.00	1.00			0.93	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4945		1610	3388			1640	1504
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					4945		1610	3388			1640	1504
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	53	804	73	34	239	0	0	20	55
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	16	31
Lane Group Flow (vph)	0	0	0	0	910	0	31	242	0	0	23	5
Confl. Peds. (#/hr)				72		72						
Turn Type				Perm			custom					custom
Protected Phases					4		1	1			2	2
Permitted Phases				4			1					2
Actuated Green, G (s)					16.5		15.5	15.5			7.5	7.5
Effective Green, g (s)					16.0		15.0	15.0			7.0	7.0
Actuated g/C Ratio					0.32		0.30	0.30			0.14	0.14
Clearance Time (s)					3.5		3.5	3.5			3.5	3.5
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					1582		483	1016			230	211
v/s Ratio Prot							0.02	c0.07			c0.01	0.00
v/s Ratio Perm					0.18							
v/c Ratio					0.58		0.06	0.24			0.10	0.02
Uniform Delay, d1					14.2		12.5	13.2			18.7	18.6
Progression Factor					1.08		1.08	1.09			1.37	2.01
Incremental Delay, d2					1.5		0.2	0.5			0.8	0.2
Delay (s)					16.8		13.7	14.9			26.6	37.5
Level of Service					B		B	B			C	D
Approach Delay (s)		0.0			16.8			14.7			31.9	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



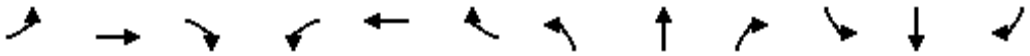
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	253	712	0	0	0	0	0	266	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.95	0.88
Frpb, ped/bikes				1.00	1.00						1.00	1.00
Flpb, ped/bikes				0.93	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1412	4786						3539	2787
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1412	4786						3539	2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	253	712	0	0	0	0	0	266	218
RTOR Reduction (vph)	0	0	0	137	7	0	0	0	0	0	0	144
Lane Group Flow (vph)	0	0	0	91	730	0	0	0	0	0	266	74
Confl. Peds. (#/hr)				72								
Turn Type				Perm								Perm
Protected Phases					1						2	
Permitted Phases				1								2
Actuated Green, G (s)				20.5	20.5						17.5	17.5
Effective Green, g (s)				20.0	20.0						17.0	17.0
Actuated g/C Ratio				0.40	0.40						0.34	0.34
Clearance Time (s)				3.5	3.5						3.5	3.5
Lane Grp Cap (vph)				565	1914						1203	948
v/s Ratio Prot											c0.08	
v/s Ratio Perm				0.06	0.15							0.03
v/c Ratio				0.16	0.38						0.22	0.08
Uniform Delay, d1				9.6	10.6						11.8	11.2
Progression Factor				1.00	1.00						0.45	0.29
Incremental Delay, d2				0.6	0.6						0.4	0.2
Delay (s)				10.2	11.2						5.7	3.3
Level of Service				B	B						A	A
Approach Delay (s)		0.0			11.0			0.0			4.7	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	NBR	SBL	SBT	NEL	NER	NER2
Lane Configurations									
Volume (vph)	8	1628	505	60	95	122	12	1527	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86		0.88	0.97	1.00	1.00	0.91	
Frpb, ped/bikes		0.99		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	
Frt		0.96		0.85	1.00	1.00	0.85	0.85	
Flt Protected		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)		6089		2787	3433	1863	1587	2882	
Flt Permitted		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (perm)		6089		2787	3433	1863	1587	2882	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	1628	505	60	95	122	12	1527	444
RTOR Reduction (vph)	0	0	0	9	0	0	0	58	0
Lane Group Flow (vph)	0	2141	0	51	95	122	669	1256	0
Confl. Peds. (#/hr)			36						36
Turn Type	Split			custom	Perm			Prot	
Protected Phases	2	2				1	3	3	
Permitted Phases				1	1				
Actuated Green, G (s)		32.9		9.9	9.9	9.9	45.7	45.7	
Effective Green, g (s)		32.9		9.4	9.4	9.4	45.7	45.7	
Actuated g/C Ratio		0.33		0.09	0.09	0.09	0.46	0.46	
Clearance Time (s)		4.0		3.5	3.5	3.5	4.0	4.0	
Vehicle Extension (s)		3.0		2.0	2.0	2.0	4.0	4.0	
Lane Grp Cap (vph)		2003		262	323	175	725	1317	
v/s Ratio Prot		c0.35				c0.07	0.42	c0.44	
v/s Ratio Perm				0.02	0.03				
v/c Ratio		1.07		0.19	0.29	0.70	0.92	0.95	
Uniform Delay, d1		33.6		41.8	42.2	43.9	25.5	26.1	
Progression Factor		1.00		1.00	0.97	0.96	1.00	1.00	
Incremental Delay, d2		41.4		0.1	0.2	9.2	17.5	15.2	
Delay (s)		75.0		41.9	41.0	51.4	43.0	41.3	
Level of Service		E		D	D	D	D	D	
Approach Delay (s)		75.0				46.9	41.9		
Approach LOS		E				D	D		

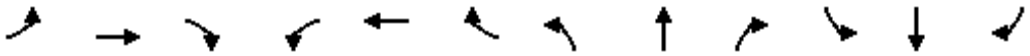
Intersection Summary			
HCM Average Control Delay	58.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



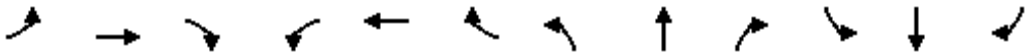
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	675	2565	112	0	0	0	0	223	333	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.76	0.81					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.93					0.97	0.94			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.94	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	5650	1196					3095	1351			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	5650	1196					3095	1351			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	675	2565	112	0	0	0	0	223	333	0	0	0
RTOR Reduction (vph)	121	2	26	0	0	0	0	1	1	0	0	0
Lane Group Flow (vph)	486	2642	75	0	0	0	0	382	172	0	0	0
Confl. Peds. (#/hr)	36		36						36			
Parking (#/hr)	0											
Turn Type	Split		Perm						Perm			
Protected Phases	1	1						2				
Permitted Phases			1						2			
Actuated Green, G (s)	70.5	70.5	70.5					21.5	21.5			
Effective Green, g (s)	70.5	70.5	70.5					21.5	21.5			
Actuated g/C Ratio	0.70	0.70	0.70					0.22	0.22			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Vehicle Extension (s)	0.2	0.2	0.2					0.2	0.2			
Lane Grp Cap (vph)	909	3983	843					665	290			
v/s Ratio Prot	0.38	c0.47						0.12				
v/s Ratio Perm			0.06						c0.13			
v/c Ratio	0.54	0.66	0.09					0.57	0.59			
Uniform Delay, d1	7.0	8.2	4.6					35.2	35.3			
Progression Factor	1.02	0.92	0.86					1.00	1.00			
Incremental Delay, d2	0.7	0.3	0.1					0.8	2.2			
Delay (s)	7.9	7.8	4.0					35.9	37.5			
Level of Service	A	A	A					D	D			
Approach Delay (s)		7.7			0.0			36.4			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



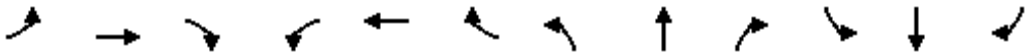
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	390	2728	0	0	0	0	0	8	4	28	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0		
Lane Util. Factor	0.86	0.86						1.00		1.00		
Frpb, ped/bikes	1.00	1.00						0.98		1.00		
Flpb, ped/bikes	0.92	1.00						1.00		0.94		
Frt	1.00	1.00						0.96		1.00		
Flt Protected	0.95	1.00						1.00		0.95		
Satd. Flow (prot)	1404	4797						1737		1665		
Flt Permitted	0.95	1.00						1.00		0.75		
Satd. Flow (perm)	1404	4797						1737		1314		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	390	2728	0	0	0	0	0	8	4	28	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	351	2767	0	0	0	0	0	9	0	28	0	0
Confl. Peds. (#/hr)	36								36	36		
Turn Type	Perm									D.Pm		
Protected Phases		1						2				
Permitted Phases	1							2		2		
Actuated Green, G (s)	71.5	71.5						21.5		21.5		
Effective Green, g (s)	71.0	71.0						21.0		21.0		
Actuated g/C Ratio	0.71	0.71						0.21		0.21		
Clearance Time (s)	3.5	3.5						3.5		3.5		
Lane Grp Cap (vph)	997	3406						365		276		
v/s Ratio Prot								0.01				
v/s Ratio Perm	0.25	0.58								c0.02		
v/c Ratio	0.35	0.81						0.02		0.10		
Uniform Delay, d1	5.6	9.9						31.4		31.9		
Progression Factor	0.86	0.98						1.00		1.08		
Incremental Delay, d2	0.8	1.8						0.1		0.7		
Delay (s)	5.6	11.6						31.5		35.2		
Level of Service	A	B						C		D		
Approach Delay (s)		10.9			0.0			31.5			35.2	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2742	240	0	0	0	0	0	0	184	332	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0								4.0	
Lane Util. Factor		0.86	0.86								0.91	
Frpb, ped/bikes		1.00	0.92								1.00	
Flpb, ped/bikes		1.00	1.00								0.97	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.98	
Satd. Flow (prot)		4796	1249								4868	
Flt Permitted		1.00	1.00								0.98	
Satd. Flow (perm)		4796	1249								4868	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2742	240	0	0	0	0	0	0	184	332	0
RTOR Reduction (vph)	0	1	37	0	0	0	0	0	0	0	100	0
Lane Group Flow (vph)	0	2765	179	0	0	0	0	0	0	0	416	0
Confl. Peds. (#/hr)			36							36		
Turn Type			Perm							Perm		
Protected Phases		1									2	
Permitted Phases			1							2		
Actuated Green, G (s)		54.5	54.5								28.5	
Effective Green, g (s)		54.0	54.0								28.0	
Actuated g/C Ratio		0.54	0.54								0.28	
Clearance Time (s)		3.5	3.5								3.5	
Lane Grp Cap (vph)		2590	674								1363	
v/s Ratio Prot		c0.58										
v/s Ratio Perm			0.14								0.09	
v/c Ratio		1.07	0.27								0.31	
Uniform Delay, d1		23.0	12.3								28.3	
Progression Factor		0.46	0.27								0.95	
Incremental Delay, d2		36.4	0.6								0.6	
Delay (s)		46.9	4.0								27.6	
Level of Service		D	A								C	
Approach Delay (s)		43.8			0.0			0.0			27.6	
Approach LOS		D			A			A			C	

Intersection Summary			
HCM Average Control Delay	41.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	25	23	88	0	142	0	257	23	50	181	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	34	25	23	88	0	142	0	257	23	50	181	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)								437				
pX, platoon unblocked												
vC, conflicting volume	693	562	182	586	552	268	184			280		
vC1, stage 1 conf vol	282	282		268	268							
vC2, stage 2 conf vol	410	280		318	284							
vCu, unblocked vol	693	562	182	586	552	268	184			280		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	95	97	84	100	82	100			96		
cM capacity (veh/h)	425	552	860	559	572	770	1391			1283		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	82	88	142	280	234
Volume Left	34	88	0	0	50
Volume Right	23	0	142	23	3
cSH	540	559	770	1391	1283
Volume to Capacity	0.15	0.16	0.18	0.00	0.04
Queue Length 95th (ft)	13	14	17	0	3
Control Delay (s)	12.9	12.6	10.7	0.0	2.0
Lane LOS	B	B	B		A
Approach Delay (s)	12.9	11.5		0.0	2.0
Approach LOS	B	B			

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	54.1%	ICU Level of Service		A
Analysis Period (min)	15			

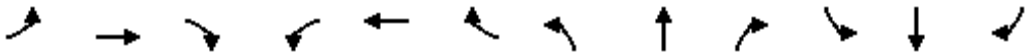
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	360	204	0	0	0	412
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	0.97	1.00				1.00
Frpb, ped/bikes	1.00	1.00				1.00
Flpb, ped/bikes	1.00	1.00				1.00
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	3433	1583				1863
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	3433	1583				1863
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	360	204	0	0	0	412
RTOR Reduction (vph)	209	118	0	0	0	0
Lane Group Flow (vph)	151	86	0	0	0	412
Confl. Peds. (#/hr)		72				
Turn Type		Prot				
Protected Phases	1	1				2
Permitted Phases						
Actuated Green, G (s)	21.5	21.5				21.5
Effective Green, g (s)	21.0	21.0				21.0
Actuated g/C Ratio	0.42	0.42				0.42
Clearance Time (s)	3.5	3.5				3.5
Lane Grp Cap (vph)	1442	665				782
v/s Ratio Prot	0.04	c0.05				c0.22
v/s Ratio Perm						
v/c Ratio	0.10	0.13				0.53
Uniform Delay, d1	8.8	8.9				10.8
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.1	0.4				2.5
Delay (s)	8.9	9.3				13.3
Level of Service	A	A				B
Approach Delay (s)	9.1		0.0			13.3
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	15	0	0	0	15	406
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	0	0	0	15	406
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					442	
pX, platoon unblocked						
vC, conflicting volume	436	0	38	30	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	436	0	38	30	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	97	100	100	100	99	
cM capacity (veh/h)	509	1085	939	855	1623	

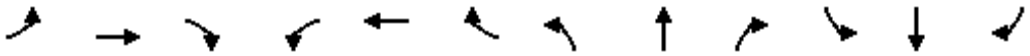
Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	15	150	271
Volume Left	0	15	0
Volume Right	0	135	271
cSH	509	1623	1700
Volume to Capacity	0.03	0.01	0.16
Queue Length 95th (ft)	2	1	0
Control Delay (s)	12.3	0.8	0.0
Lane LOS	B	A	
Approach Delay (s)	12.3	0.3	
Approach LOS	B		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		



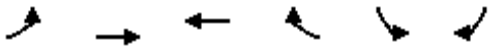
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	323	79	0	0	0	0	14	193	2	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	3.5		4.0	
Lane Util. Factor		0.91						0.95	0.95		1.00	
Frpb, ped/bikes		0.98						0.93	0.92		1.00	
Flpb, ped/bikes		1.00						1.00	1.00		0.99	
Frt		0.97						0.87	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		4849						1429	1380		1843	
Flt Permitted		1.00						1.00	1.00		0.98	
Satd. Flow (perm)		4849						1429	1380		1822	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	323	79	0	0	0	0	14	193	2	19	0
RTOR Reduction (vph)	0	44	0	0	0	0	0	64	70	0	0	0
Lane Group Flow (vph)	0	362	0	0	0	0	0	41	32	0	21	0
Confl. Peds. (#/hr)	72		72						72	72		
Turn Type	Perm								Perm	Perm		
Protected Phases		1						2			2	
Permitted Phases	1								2	2		
Actuated Green, G (s)		22.5						15.5	15.5		15.5	
Effective Green, g (s)		22.0						15.0	15.5		15.0	
Actuated g/C Ratio		0.44						0.30	0.31		0.30	
Clearance Time (s)		3.5						3.5	3.5		3.5	
Lane Grp Cap (vph)		2134						429	428		547	
v/s Ratio Prot								c0.03				
v/s Ratio Perm		0.07							0.02		0.01	
v/c Ratio		0.17						0.10	0.07		0.04	
Uniform Delay, d1		8.5						12.6	12.2		12.4	
Progression Factor		0.27						0.64	0.67		1.00	
Incremental Delay, d2		0.2						0.4	0.3		0.1	
Delay (s)		2.5						8.5	8.5		12.5	
Level of Service		A						A	A		B	
Approach Delay (s)		2.5			0.0			8.5			12.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



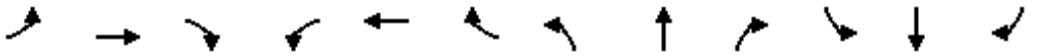
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	457	80	0	0	0	0	0	0	145	594	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.91	0.91	
Frpb, ped/bikes		0.99								1.00	1.00	
Flpb, ped/bikes		1.00								0.93	1.00	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4911								1494	3380	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4911								1494	3380	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	457	80	0	0	0	0	0	0	145	594	0
RTOR Reduction (vph)	0	49	0	0	0	0	0	0	0	83	3	0
Lane Group Flow (vph)	0	488	0	0	0	0	0	0	0	47	606	0
Confl. Peds. (#/hr)			72							72		
Turn Type										Perm		
Protected Phases		1									2	
Permitted Phases										2		
Actuated Green, G (s)		19.5								18.5	18.5	
Effective Green, g (s)		19.0								18.0	18.0	
Actuated g/C Ratio		0.38								0.36	0.36	
Clearance Time (s)		3.5								3.5	3.5	
Lane Grp Cap (vph)		1866								538	1217	
v/s Ratio Prot		c0.10										
v/s Ratio Perm										0.03	0.18	
v/c Ratio		0.26								0.09	0.50	
Uniform Delay, d1		10.7								10.6	12.5	
Progression Factor		0.56								2.22	1.29	
Incremental Delay, d2		0.3								0.3	1.4	
Delay (s)		6.3								23.7	17.4	
Level of Service		A								C	B	
Approach Delay (s)		6.3			0.0			0.0			18.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



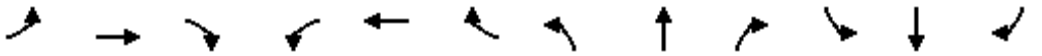
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	523	164	179	25	38	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.88	
Flt Protected	0.95	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1770	1863	1863	1583	1625	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1770	1863	1863	1583	1625	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	523	164	179	25	38	417
RTOR Reduction (vph)	0	0	0	16	345	0
Lane Group Flow (vph)	523	164	179	9	110	0
Turn Type	Prot			pm+ov		
Protected Phases	7	4	8	1	1	
Permitted Phases				8		
Actuated Green, G (s)	36.1	41.5	14.2	27.3	13.1	
Effective Green, g (s)	36.6	41.5	14.2	27.3	13.1	
Actuated g/C Ratio	0.48	0.55	0.19	0.36	0.17	
Clearance Time (s)	4.5	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	4.5	4.5	3.0	3.0	
Lane Grp Cap (vph)	854	1019	349	653	280	
v/s Ratio Prot	c0.30	0.09	c0.10	0.00	c0.07	
v/s Ratio Perm				0.00		
v/c Ratio	0.61	0.16	0.51	0.01	0.39	
Uniform Delay, d1	14.4	8.5	27.7	15.6	27.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.1	2.1	0.0	0.9	
Delay (s)	15.6	8.7	29.8	15.6	28.8	
Level of Service	B	A	C	B	C	
Approach Delay (s)		13.9	28.1		28.8	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	2672	55	419	351	0	0	0	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				3.5
Lane Util. Factor					0.86		0.97	0.95				0.88
Frpb, ped/bikes					1.00		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					1.00		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6213		3433	3362				2787
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6213		3433	3362				2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2672	55	419	351	0	0	0	76
RTOR Reduction (vph)	0	0	0	0	3	0	2	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	2724	0	417	351	0	0	0	75
Confl. Peds. (#/hr)	72					72			144	144		
Confl. Bikes (#/hr)			10						10			
Parking (#/hr)					0			0				
Turn Type							Split					custom
Protected Phases					1		2	2				
Permitted Phases												2
Actuated Green, G (s)					57.0		34.5	34.5				34.5
Effective Green, g (s)					58.0		34.0	34.0				34.5
Actuated g/C Ratio					0.58		0.34	0.34				0.34
Clearance Time (s)					5.0		3.5	3.5				3.5
Lane Grp Cap (vph)					3604		1167	1143				962
v/s Ratio Prot					c0.44		c0.12	0.10				
v/s Ratio Perm												0.03
v/c Ratio					0.76		0.36	0.31				0.08
Uniform Delay, d1					15.7		24.8	24.3				22.0
Progression Factor					0.37		0.95	0.95				1.00
Incremental Delay, d2					0.7		0.8	0.7				0.2
Delay (s)					6.5		24.3	23.7				22.2
Level of Service					A		C	C				C
Approach Delay (s)		0.0			6.5			24.0			22.2	
Approach LOS		A			A			C			C	

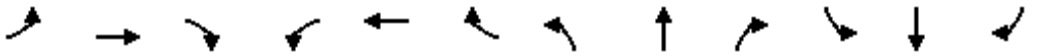
Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	41	2147	65	292	106	0	0	13	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.86		1.00	0.95			0.95	0.95
Frpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			0.86	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					6318		1770	3539			1527	1504
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					6318		1770	3539			1527	1504
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	41	2147	65	292	106	0	0	13	288
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	69	69
Lane Group Flow (vph)	0	0	0	0	2249	0	292	106	0	0	82	81
Confl. Peds. (#/hr)	72		72	72		72			72	72		
Confl. Bikes (#/hr)						10			10			
Parking (#/hr)				5		5						
Turn Type				Perm			custom					custom
Protected Phases					4		1	1			2	2
Permitted Phases				4			1					2
Actuated Green, G (s)					37.3		27.1	27.1			25.1	25.1
Effective Green, g (s)					36.8		26.6	26.6			24.6	24.6
Actuated g/C Ratio					0.37		0.27	0.27			0.25	0.25
Clearance Time (s)					3.5		3.5	3.5			3.5	3.5
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					2325		471	941			376	370
v/s Ratio Prot							c0.17	0.03			0.05	c0.05
v/s Ratio Perm					0.36							
v/c Ratio					0.97		0.62	0.11			0.22	0.22
Uniform Delay, d1					31.0		32.3	27.8			30.0	30.1
Progression Factor					0.56		0.98	1.00			0.68	0.67
Incremental Delay, d2					9.5		5.9	0.2			1.3	1.4
Delay (s)					26.9		37.7	27.9			21.6	21.5
Level of Service					C		D	C			C	C
Approach Delay (s)		0.0			26.9			35.1			21.6	
Approach LOS		A			C			D			C	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	191	1757	0	0	0	0	0	389	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.95	0.88
Frpb, ped/bikes				1.00	1.00						1.00	0.84
Flpb, ped/bikes				0.86	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1303	4796						3539	2346
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1303	4796						3539	2346
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	191	1757	0	0	0	0	0	389	496
RTOR Reduction (vph)	0	0	0	46	1	0	0	0	0	0	0	155
Lane Group Flow (vph)	0	0	0	126	1775	0	0	0	0	0	389	341
Confl. Peds. (#/hr)	72		72	72		72	72		72	72		72
Confl. Bikes (#/hr)						10						10
Turn Type				Perm								Perm
Protected Phases					1						2	
Permitted Phases				1								2
Actuated Green, G (s)				48.5	48.5						34.5	34.5
Effective Green, g (s)				48.0	48.0						34.0	34.0
Actuated g/C Ratio				0.48	0.48						0.34	0.34
Clearance Time (s)				3.5	3.5						3.5	3.5
Lane Grp Cap (vph)				625	2302						1203	798
v/s Ratio Prot											0.11	
v/s Ratio Perm				0.10	0.37							c0.15
v/c Ratio				0.20	0.77						0.32	0.43
Uniform Delay, d1				15.0	21.5						24.5	25.5
Progression Factor				1.00	1.00						0.78	0.68
Incremental Delay, d2				0.7	2.6						0.7	1.6
Delay (s)				15.7	24.0						19.8	18.9
Level of Service				B	C						B	B
Approach Delay (s)		0.0			23.3			0.0			19.3	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

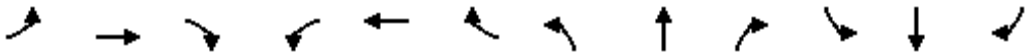
c Critical Lane Group

Movement	EBL	EBT	EBR	NBR	SBL	SBT	NEL	NER	NER2
Lane Configurations									
Volume (vph)	1	897	417	173	236	379	10	657	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86		0.88	0.97	1.00	1.00	0.91	
Frpb, ped/bikes		0.99		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	
Frt		0.95		0.85	1.00	1.00	0.85	0.85	
Flt Protected		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)		6012		2787	3433	1863	1589	2882	
Flt Permitted		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (perm)		6012		2787	3433	1863	1589	2882	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	897	417	173	236	379	10	657	324
RTOR Reduction (vph)	0	0	0	44	0	0	0	106	0
Lane Group Flow (vph)	0	1315	0	129	236	379	332	553	0
Confl. Peds. (#/hr)			36						36
Turn Type	Split			custom	Perm			Prot	
Protected Phases	2	2				1	3	3	
Permitted Phases				1	1				
Actuated Green, G (s)		21.0		15.9	15.9	15.9	21.0	21.0	
Effective Green, g (s)		21.0		15.4	15.4	15.4	21.0	21.0	
Actuated g/C Ratio		0.30		0.22	0.22	0.22	0.30	0.30	
Clearance Time (s)		4.0		3.5	3.5	3.5	4.0	4.0	
Vehicle Extension (s)		3.0		2.0	2.0	2.0	4.0	4.0	
Lane Grp Cap (vph)		1819		618	762	413	481	872	
v/s Ratio Prot		c0.22				c0.20	c0.21	0.19	
v/s Ratio Perm				0.05	0.07				
v/c Ratio		0.87dr		0.21	0.31	0.92	0.69	0.63	
Uniform Delay, d1		21.6		22.0	22.6	26.4	21.3	20.9	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.5		0.1	0.1	24.5	4.6	1.7	
Delay (s)		24.1		22.1	22.6	50.9	25.9	22.6	
Level of Service		C		C	C	D	C	C	
Approach Delay (s)		24.1				40.0	23.7		
Approach LOS		C				D	C		

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

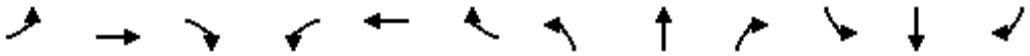
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



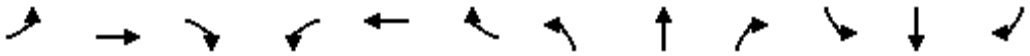
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	316	1571	102	0	0	0	0	393	338	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0	4.0			
Lane Util. Factor	0.81	0.81						0.91	0.91			
Frpb, ped/bikes	1.00	1.00						0.99	0.96			
Flpb, ped/bikes	1.00	1.00						1.00	1.00			
Frt	1.00	0.99						0.97	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1290	5952						3247	1387			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1290	5952						3247	1387			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	316	1571	102	0	0	0	0	393	338	0	0	0
RTOR Reduction (vph)	165	22	0	0	0	0	0	3	3	0	0	0
Lane Group Flow (vph)	119	1683	0	0	0	0	0	505	220	0	0	0
Confl. Peds. (#/hr)	36		36						36			
Parking (#/hr)	0											
Turn Type	Split								Perm			
Protected Phases	1	1						2				
Permitted Phases									2			
Actuated Green, G (s)	21.0	21.0						21.0	21.0			
Effective Green, g (s)	21.0	21.0						21.0	21.0			
Actuated g/C Ratio	0.42	0.42						0.42	0.42			
Clearance Time (s)	4.0	4.0						4.0	4.0			
Vehicle Extension (s)	0.2	0.2						0.2	0.2			
Lane Grp Cap (vph)	542	2500						1364	583			
v/s Ratio Prot	0.09	c0.28						0.16				
v/s Ratio Perm									c0.16			
v/c Ratio	0.22	0.67						0.37	0.38			
Uniform Delay, d1	9.3	11.7						10.0	10.0			
Progression Factor	1.00	1.00						1.00	1.00			
Incremental Delay, d2	0.9	1.5						0.1	0.1			
Delay (s)	10.2	13.2						10.0	10.1			
Level of Service	B	B						B	B			
Approach Delay (s)		12.8			0.0			10.1			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	1749	0	0	0	0	0	142	185	67	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0		
Lane Util. Factor	0.86	0.86						1.00		1.00		
Frpb, ped/bikes	1.00	1.00						0.98		1.00		
Flpb, ped/bikes	0.96	1.00						1.00		0.98		
Frt	1.00	1.00						0.92		1.00		
Flt Protected	0.95	1.00						1.00		0.95		
Satd. Flow (prot)	1463	4803						1680		1739		
Flt Permitted	0.95	1.00						1.00		0.47		
Satd. Flow (perm)	1463	4803						1680		853		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	1749	0	0	0	0	0	142	185	67	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	94	1760	0	0	0	0	0	323	0	67	0	0
Confl. Peds. (#/hr)	36								36	36		
Turn Type	Perm									D.Pm		
Protected Phases		1						2				
Permitted Phases	1							2		2		
Actuated Green, G (s)	24.5	24.5						18.5		18.5		
Effective Green, g (s)	24.0	24.0						18.0		18.0		
Actuated g/C Ratio	0.48	0.48						0.36		0.36		
Clearance Time (s)	3.5	3.5						3.5		3.5		
Lane Grp Cap (vph)	702	2305						605		307		
v/s Ratio Prot								c0.19				
v/s Ratio Perm	0.06	0.37								0.08		
v/c Ratio	0.13	0.76						0.53		0.22		
Uniform Delay, d1	7.2	10.7						12.7		11.1		
Progression Factor	0.42	0.35						1.00		1.23		
Incremental Delay, d2	0.3	1.9						3.3		1.2		
Delay (s)	3.3	5.7						16.0		14.9		
Level of Service	A	A						B		B		
Approach Delay (s)		5.6			0.0			16.0			14.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1644	307	0	0	0	0	0	0	96	454	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		4928									5005	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		4928									5005	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1644	307	0	0	0	0	0	0	96	454	4
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	0	66	0
Lane Group Flow (vph)	0	1897	0	0	0	0	0	0	0	0	488	0
Confl. Peds. (#/hr)			36							36		
Turn Type										Perm		
Protected Phases		1									2	
Permitted Phases										2		
Actuated Green, G (s)		21.5									16.5	
Effective Green, g (s)		21.0									16.0	
Actuated g/C Ratio		0.42									0.32	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		2070									1602	
v/s Ratio Prot		c0.38										
v/s Ratio Perm											0.10	
v/c Ratio		0.92									0.30	
Uniform Delay, d1		13.7									12.8	
Progression Factor		0.45									1.05	
Incremental Delay, d2		5.6									0.5	
Delay (s)		11.7									13.9	
Level of Service		B									B	
Approach Delay (s)		11.7			0.0			0.0			13.9	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	6	54	25	60	25	59	3	164	307	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	3	0	6	54	25	60	25	59	3	164	307	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)								437				
pX, platoon unblocked												
vC, conflicting volume	843	772	332	776	796	60	357			62		
vC1, stage 1 conf vol	660	660		110	110							
vC2, stage 2 conf vol	183	112		666	685							
vCu, unblocked vol	843	772	332	776	796	60	357			62		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	85	93	94	98			89		
cM capacity (veh/h)	369	391	710	362	364	1005	1202			1541		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	9	54	85	87	521
Volume Left	3	54	0	25	164
Volume Right	6	0	60	3	50
cSH	542	362	662	1202	1541
Volume to Capacity	0.02	0.15	0.13	0.02	0.11
Queue Length 95th (ft)	1	13	11	2	9
Control Delay (s)	11.7	16.7	11.2	2.4	3.1
Lane LOS	B	C	B	A	A
Approach Delay (s)	11.7	13.4		2.4	3.1
Approach LOS	B	B			

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	49.1%	ICU Level of Service	A	
Analysis Period (min)	15			

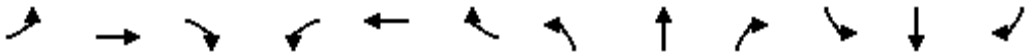
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	233	123	0	0	0	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	0.97	1.00				1.00
Frpb, ped/bikes	1.00	1.00				1.00
Flpb, ped/bikes	1.00	1.00				1.00
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	3433	1583				1863
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	3433	1583				1863
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	233	123	0	0	0	378
RTOR Reduction (vph)	135	71	0	0	0	0
Lane Group Flow (vph)	98	52	0	0	0	378
Confl. Peds. (#/hr)		72				
Turn Type		Prot				
Protected Phases	1	1				2
Permitted Phases						
Actuated Green, G (s)	21.5	21.5				21.5
Effective Green, g (s)	21.0	21.0				21.0
Actuated g/C Ratio	0.42	0.42				0.42
Clearance Time (s)	3.5	3.5				3.5
Lane Grp Cap (vph)	1442	665				782
v/s Ratio Prot	0.03	c0.03				c0.20
v/s Ratio Perm						
v/c Ratio	0.07	0.08				0.48
Uniform Delay, d1	8.7	8.7				10.6
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.1	0.2				2.1
Delay (s)	8.7	8.9				12.7
Level of Service	A	A				B
Approach Delay (s)	8.8		0.0			12.7
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	35	0	0	0	205	808
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	35	0	0	0	205	808
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					442	
pX, platoon unblocked						
vC, conflicting volume	1218	0	428	410	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1218	0	428	410	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	78	100	100	100	87	
cM capacity (veh/h)	158	1085	404	464	1623	

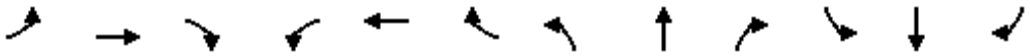
Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	35	474	539
Volume Left	0	205	0
Volume Right	0	269	539
cSH	158	1623	1700
Volume to Capacity	0.22	0.13	0.32
Queue Length 95th (ft)	20	11	0
Control Delay (s)	34.2	3.9	0.0
Lane LOS	D	A	
Approach Delay (s)	34.2	1.8	
Approach LOS	D		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		



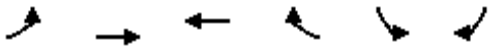
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	371	55	0	0	0	0	20	280	5	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	3.5		4.0	
Lane Util. Factor		0.91						0.95	0.95		1.00	
Frpb, ped/bikes		0.99						0.93	0.92		1.00	
Flpb, ped/bikes		0.99						1.00	1.00		0.99	
Frt		0.98						0.87	0.85		1.00	
Flt Protected		1.00						1.00	1.00		0.99	
Satd. Flow (prot)		4903						1429	1380		1823	
Flt Permitted		1.00						1.00	1.00		0.96	
Satd. Flow (perm)		4903						1429	1380		1772	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	20	371	55	0	0	0	0	20	280	5	20	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	82	90	0	0	0
Lane Group Flow (vph)	0	411	0	0	0	0	0	70	58	0	25	0
Confl. Peds. (#/hr)	72		72						72	72		
Turn Type	Perm								Perm	Perm		
Protected Phases		1						2			2	
Permitted Phases	1								2	2		
Actuated Green, G (s)		18.5						19.5	19.5		19.5	
Effective Green, g (s)		18.0						19.0	19.5		19.0	
Actuated g/C Ratio		0.36						0.38	0.39		0.38	
Clearance Time (s)		3.5						3.5	3.5		3.5	
Lane Grp Cap (vph)		1765						543	538		673	
v/s Ratio Prot								c0.05				
v/s Ratio Perm		0.08							0.04		0.01	
v/c Ratio		0.23						0.13	0.11		0.04	
Uniform Delay, d1		11.2						10.1	9.7		9.7	
Progression Factor		0.49						2.17	3.11		1.00	
Incremental Delay, d2		0.3						0.5	0.4		0.1	
Delay (s)		5.8						22.4	30.6		9.9	
Level of Service		A						C	C		A	
Approach Delay (s)		5.8			0.0			26.4			9.9	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	627	28	0	0	0	0	0	0	140	407	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.91	0.91	
Frpb, ped/bikes		1.00								1.00	1.00	
Flpb, ped/bikes		1.00								0.95	1.00	
Frt		0.99								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5039								1528	3379	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5039								1528	3379	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	627	28	0	0	0	0	0	0	140	407	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	81	4	0
Lane Group Flow (vph)	0	646	0	0	0	0	0	0	0	45	417	0
Confl. Peds. (#/hr)			72							72		
Turn Type										Perm		
Protected Phases		1									2	
Permitted Phases										2		
Actuated Green, G (s)		19.5								18.5	18.5	
Effective Green, g (s)		19.0								18.0	18.0	
Actuated g/C Ratio		0.38								0.36	0.36	
Clearance Time (s)		3.5								3.5	3.5	
Lane Grp Cap (vph)		1915								550	1216	
v/s Ratio Prot		c0.13										
v/s Ratio Perm										0.03	0.12	
v/c Ratio		0.34								0.08	0.34	
Uniform Delay, d1		11.0								10.6	11.7	
Progression Factor		0.92								2.56	1.34	
Incremental Delay, d2		0.5								0.3	0.7	
Delay (s)		10.6								27.3	16.4	
Level of Service		B								C	B	
Approach Delay (s)		10.6			0.0			0.0			18.9	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

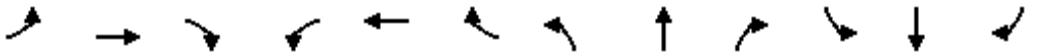


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	298	155	90	11	43	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.88	
Flt Protected	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (prot)	1770	1863	1863	1583	1629	
Flt Permitted	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (perm)	1770	1863	1863	1583	1629	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	298	155	90	11	43	376
RTOR Reduction (vph)	0	0	0	6	267	0
Lane Group Flow (vph)	298	155	90	5	152	0
Turn Type	Prot			pm+ov		
Protected Phases	7	4	8	1	1	
Permitted Phases				8		
Actuated Green, G (s)	13.9	15.1	10.3	20.6	10.3	
Effective Green, g (s)	14.4	15.1	10.3	20.6	10.3	
Actuated g/C Ratio	0.31	0.32	0.22	0.44	0.22	
Clearance Time (s)	4.5	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	4.5	4.5	3.0	3.0	
Lane Grp Cap (vph)	542	599	408	829	357	
v/s Ratio Prot	c0.17	c0.08	0.05	0.00	c0.09	
v/s Ratio Perm				0.00		
v/c Ratio	0.55	0.26	0.22	0.01	0.43	
Uniform Delay, d1	13.6	11.8	15.1	7.4	15.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.4	0.5	0.0	0.8	
Delay (s)	14.5	12.2	15.5	7.4	16.6	
Level of Service	B	B	B	A	B	
Approach Delay (s)		13.7	14.6		16.6	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBT	WBR	NBL2	NBL	SBR	SBR2
Lane Configurations							
Volume (vph)	10	688	275	5	5	7	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		0.91	0.88		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	0.85
Flt Protected		1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		5073	2787		1770	1583	1583
Flt Permitted		1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		5073	2787		1770	1583	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	688	275	5	5	7	14
RTOR Reduction (vph)	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	698	275	0	10	7	1
Confl. Peds. (#/hr)	72						
Parking (#/hr)	5						
Turn Type	Perm		Prot	Prot	Prot	custom	custom
Protected Phases		2	2	4	4	3	3
Permitted Phases	2						
Actuated Green, G (s)		24.4	24.4		10.9	2.7	2.7
Effective Green, g (s)		24.4	24.4		10.9	2.7	2.7
Actuated g/C Ratio		0.49	0.49		0.22	0.05	0.05
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		2476	1360		386	85	85
v/s Ratio Prot			0.10		c0.01	c0.00	0.00
v/s Ratio Perm		0.14					
v/c Ratio		0.28	0.20		0.03	0.08	0.01
Uniform Delay, d1		7.6	7.3		15.4	22.5	22.4
Progression Factor		1.51	1.50		1.00	1.00	1.00
Incremental Delay, d2		0.3	0.3		0.0	0.4	0.0
Delay (s)		11.7	11.2		15.4	22.9	22.4
Level of Service		B	B		B	C	C
Approach Delay (s)		11.6					
Approach LOS		B					

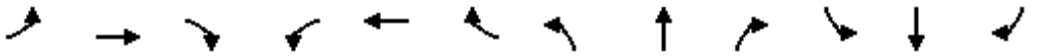
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	812	150	148	786	0	0	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				3.5
Lane Util. Factor					0.86		0.97	0.95				0.88
Frpb, ped/bikes					0.99		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.98		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6027		3433	3362				2787
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6027		3433	3362				2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	812	150	148	786	0	0	0	13
RTOR Reduction (vph)	0	0	0	0	67	0	54	0	0	0	0	7
Lane Group Flow (vph)	0	0	0	0	895	0	94	786	0	0	0	6
Confl. Peds. (#/hr)						72						
Parking (#/hr)					0			0				
Turn Type							Split					custom
Protected Phases					1		2	2				
Permitted Phases												2
Actuated Green, G (s)					17.0		24.5	24.5				24.5
Effective Green, g (s)					18.0		24.0	24.0				24.5
Actuated g/C Ratio					0.36		0.48	0.48				0.49
Clearance Time (s)					5.0		3.5	3.5				3.5
Lane Grp Cap (vph)					2170		1648	1614				1366
v/s Ratio Prot					c0.15		0.03	c0.23				
v/s Ratio Perm												0.00
v/c Ratio					0.41		0.06	0.49				0.00
Uniform Delay, d1					12.0		7.0	8.8				6.5
Progression Factor					1.79		1.22	1.04				1.00
Incremental Delay, d2					0.5		0.1	0.9				0.0
Delay (s)					22.0		8.5	10.1				6.5
Level of Service					C		A	B				A
Approach Delay (s)		0.0			22.0			9.9			6.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

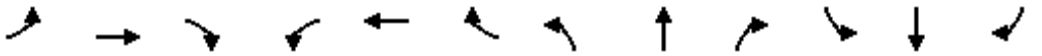
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	53	829	73	34	239	0	0	20	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.91		0.91	0.91			0.95	0.95
Frpb, ped/bikes					0.99		1.00	1.00			1.00	1.00
Flpb, ped/bikes					0.99		1.00	1.00			1.00	1.00
Frt					0.99		1.00	1.00			0.93	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4948		1610	3388			1640	1504
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					4948		1610	3388			1640	1504
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	53	829	73	34	239	0	0	20	55
RTOR Reduction (vph)	0	0	0	0	19	0	0	0	0	0	16	31
Lane Group Flow (vph)	0	0	0	0	936	0	31	242	0	0	23	5
Confl. Peds. (#/hr)				72		72						
Turn Type				Perm			custom					custom
Protected Phases					4		1	1			2	2
Permitted Phases				4			1					2
Actuated Green, G (s)					16.5		15.5	15.5			7.5	7.5
Effective Green, g (s)					16.0		15.0	15.0			7.0	7.0
Actuated g/C Ratio					0.32		0.30	0.30			0.14	0.14
Clearance Time (s)					3.5		3.5	3.5			3.5	3.5
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					1583		483	1016			230	211
v/s Ratio Prot							0.02	c0.07			c0.01	0.00
v/s Ratio Perm					0.19							
v/c Ratio					0.59		0.06	0.24			0.10	0.02
Uniform Delay, d1					14.3		12.5	13.2			18.7	18.6
Progression Factor					1.09		1.07	1.10			1.38	2.01
Incremental Delay, d2					1.6		0.2	0.5			0.8	0.2
Delay (s)					17.2		13.6	15.0			26.7	37.4
Level of Service					B		B	B			C	D
Approach Delay (s)		0.0			17.2			14.8			31.8	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



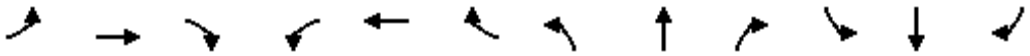
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	253	722	0	0	0	0	0	268	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.95	0.88
Frpb, ped/bikes				1.00	1.00						1.00	1.00
Flpb, ped/bikes				0.93	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1412	4786						3539	2787
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1412	4786						3539	2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	253	722	0	0	0	0	0	268	232
RTOR Reduction (vph)	0	0	0	137	7	0	0	0	0	0	0	153
Lane Group Flow (vph)	0	0	0	91	740	0	0	0	0	0	268	79
Confl. Peds. (#/hr)				72								
Turn Type				Perm								Perm
Protected Phases					1						2	
Permitted Phases				1								2
Actuated Green, G (s)				20.5	20.5						17.5	17.5
Effective Green, g (s)				20.0	20.0						17.0	17.0
Actuated g/C Ratio				0.40	0.40						0.34	0.34
Clearance Time (s)				3.5	3.5						3.5	3.5
Lane Grp Cap (vph)				565	1914						1203	948
v/s Ratio Prot											c0.08	
v/s Ratio Perm				0.06	0.15							0.03
v/c Ratio				0.16	0.39						0.22	0.08
Uniform Delay, d1				9.6	10.6						11.8	11.2
Progression Factor				1.00	1.00						0.46	0.37
Incremental Delay, d2				0.6	0.6						0.4	0.2
Delay (s)				10.2	11.2						5.9	4.3
Level of Service				B	B						A	A
Approach Delay (s)		0.0			11.0			0.0			5.1	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	NBR	SBL	SBT	NEL	NER	NER2
Lane Configurations									
Volume (vph)	8	1642	505	60	95	130	12	1538	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86		0.88	0.97	1.00	1.00	0.91	
Frpb, ped/bikes		0.99		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	
Frt		0.96		0.85	1.00	1.00	0.85	0.85	
Flt Protected		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)		6091		2787	3433	1863	1587	2882	
Flt Permitted		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (perm)		6091		2787	3433	1863	1587	2882	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	1642	505	60	95	130	12	1538	444
RTOR Reduction (vph)	0	0	0	9	0	0	0	55	0
Lane Group Flow (vph)	0	2155	0	51	95	130	658	1281	0
Confl. Peds. (#/hr)			36						36
Turn Type	Split			custom	Perm			Prot	
Protected Phases	2	2				1	3	3	
Permitted Phases				1	1				
Actuated Green, G (s)		32.3		10.2	10.2	10.2	46.0	46.0	
Effective Green, g (s)		32.3		9.7	9.7	9.7	46.0	46.0	
Actuated g/C Ratio		0.32		0.10	0.10	0.10	0.46	0.46	
Clearance Time (s)		4.0		3.5	3.5	3.5	4.0	4.0	
Vehicle Extension (s)		3.0		2.0	2.0	2.0	4.0	4.0	
Lane Grp Cap (vph)		1967		270	333	181	730	1326	
v/s Ratio Prot		c0.35				c0.07	0.41	c0.44	
v/s Ratio Perm				0.02	0.03				
v/c Ratio		1.10		0.19	0.29	0.72	0.90	0.97	
Uniform Delay, d1		33.9		41.5	41.9	43.8	24.9	26.2	
Progression Factor		1.00		1.00	0.97	0.95	1.00	1.00	
Incremental Delay, d2		51.7		0.1	0.2	10.6	14.6	17.2	
Delay (s)		85.6		41.7	40.8	52.3	39.5	43.4	
Level of Service		F		D	D	D	D	D	
Approach Delay (s)		85.6				47.4	42.1		
Approach LOS		F				D	D		

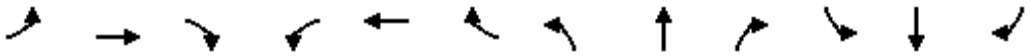
Intersection Summary			
HCM Average Control Delay	63.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



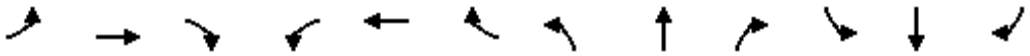
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	700	2565	112	0	0	0	0	231	333	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.76	0.81					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.93					0.97	0.94			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.94	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	5650	1196					3104	1351			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	5650	1196					3104	1351			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	700	2565	112	0	0	0	0	231	333	0	0	0
RTOR Reduction (vph)	125	2	26	0	0	0	0	1	1	0	0	0
Lane Group Flow (vph)	505	2644	75	0	0	0	0	387	175	0	0	0
Confl. Peds. (#/hr)	36		36						36			
Parking (#/hr)	0											
Turn Type	Split		Perm						Perm			
Protected Phases	1	1						2				
Permitted Phases			1						2			
Actuated Green, G (s)	70.5	70.5	70.5					21.5	21.5			
Effective Green, g (s)	70.5	70.5	70.5					21.5	21.5			
Actuated g/C Ratio	0.70	0.70	0.70					0.22	0.22			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Vehicle Extension (s)	0.2	0.2	0.2					0.2	0.2			
Lane Grp Cap (vph)	909	3983	843					667	290			
v/s Ratio Prot	0.39	c0.47						0.12				
v/s Ratio Perm			0.06						c0.13			
v/c Ratio	0.56	0.66	0.09					0.58	0.60			
Uniform Delay, d1	7.1	8.2	4.6					35.2	35.4			
Progression Factor	1.03	0.92	0.85					1.00	1.00			
Incremental Delay, d2	0.7	0.3	0.1					0.8	2.4			
Delay (s)	8.0	7.8	4.0					36.0	37.8			
Level of Service	A	A	A					D	D			
Approach Delay (s)		7.7			0.0			36.6			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



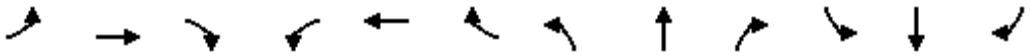
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	390	2728	0	0	0	0	0	8	4	28	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0		
Lane Util. Factor	0.86	0.86						1.00		1.00		
Frpb, ped/bikes	1.00	1.00						0.98		1.00		
Flpb, ped/bikes	0.92	1.00						1.00		0.94		
Frt	1.00	1.00						0.95		1.00		
Flt Protected	0.95	1.00						1.00		0.95		
Satd. Flow (prot)	1404	4797						1737		1665		
Flt Permitted	0.95	1.00						1.00		0.75		
Satd. Flow (perm)	1404	4797						1737		1314		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	390	2728	0	0	0	0	0	8	4	28	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	351	2767	0	0	0	0	0	9	0	28	0	0
Confl. Peds. (#/hr)	36								36	36		
Turn Type	Perm									D.Pm		
Protected Phases		1						2				
Permitted Phases	1							2		2		
Actuated Green, G (s)	71.5	71.5						21.5		21.5		
Effective Green, g (s)	71.0	71.0						21.0		21.0		
Actuated g/C Ratio	0.71	0.71						0.21		0.21		
Clearance Time (s)	3.5	3.5						3.5		3.5		
Lane Grp Cap (vph)	997	3406						365		276		
v/s Ratio Prot								0.01				
v/s Ratio Perm	0.25	0.58								c0.02		
v/c Ratio	0.35	0.81						0.02		0.10		
Uniform Delay, d1	5.6	9.9						31.4		31.9		
Progression Factor	0.85	0.97						1.00		1.09		
Incremental Delay, d2	0.8	1.8						0.1		0.7		
Delay (s)	5.6	11.5						31.5		35.3		
Level of Service	A	B						C		D		
Approach Delay (s)		10.8			0.0			31.5			35.3	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2742	240	0	0	0	0	0	0	190	328	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0								4.0	
Lane Util. Factor		0.86	0.86								0.91	
Frpb, ped/bikes		1.00	0.92								1.00	
Flpb, ped/bikes		1.00	1.00								0.97	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.98	
Satd. Flow (prot)		4796	1249								4862	
Flt Permitted		1.00	1.00								0.98	
Satd. Flow (perm)		4796	1249								4862	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2742	240	0	0	0	0	0	0	190	328	0
RTOR Reduction (vph)	0	1	37	0	0	0	0	0	0	0	101	0
Lane Group Flow (vph)	0	2765	179	0	0	0	0	0	0	0	417	0
Confl. Peds. (#/hr)			36							36		
Turn Type			Perm							Perm		
Protected Phases		1									2	
Permitted Phases			1							2		
Actuated Green, G (s)		54.5	54.5								28.5	
Effective Green, g (s)		54.0	54.0								28.0	
Actuated g/C Ratio		0.54	0.54								0.28	
Clearance Time (s)		3.5	3.5								3.5	
Lane Grp Cap (vph)		2590	674								1361	
v/s Ratio Prot		c0.58										
v/s Ratio Perm			0.14								0.09	
v/c Ratio		1.07	0.27								0.31	
Uniform Delay, d1		23.0	12.3								28.4	
Progression Factor		0.45	0.27								0.95	
Incremental Delay, d2		36.4	0.6								0.6	
Delay (s)		46.8	4.0								27.6	
Level of Service		D	A								C	
Approach Delay (s)		43.7			0.0			0.0			27.6	
Approach LOS		D			A			A			C	

Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	37	25	29	89	6	142	0	263	23	50	181	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	37	25	29	89	6	142	0	263	23	50	181	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)								437				
pX, platoon unblocked												
vC, conflicting volume	704	570	184	600	562	274	187			286		
vC1, stage 1 conf vol	284	284		274	274							
vC2, stage 2 conf vol	420	286		326	287							
vCu, unblocked vol	704	570	184	600	562	274	187			286		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	95	97	84	99	81	100			96		
cM capacity (veh/h)	416	549	858	549	568	764	1387			1276		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	91	89	148	286	237
Volume Left	37	89	0	0	50
Volume Right	29	0	142	23	6
cSH	541	549	754	1387	1276
Volume to Capacity	0.17	0.16	0.20	0.00	0.04
Queue Length 95th (ft)	15	14	18	0	3
Control Delay (s)	13.0	12.8	10.9	0.0	1.9
Lane LOS	B	B	B		A
Approach Delay (s)	13.0	11.6		0.0	1.9
Approach LOS	B	B			

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	55.5%	ICU Level of Service		B
Analysis Period (min)	15			

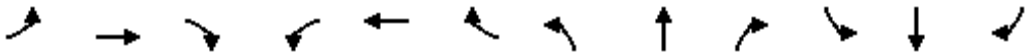
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	360	210	0	0	0	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	0.97	1.00				1.00
Frpb, ped/bikes	1.00	1.00				1.00
Flpb, ped/bikes	1.00	1.00				1.00
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	3433	1583				1863
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	3433	1583				1863
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	360	210	0	0	0	419
RTOR Reduction (vph)	209	122	0	0	0	0
Lane Group Flow (vph)	151	88	0	0	0	419
Confl. Peds. (#/hr)		72				
Turn Type		Prot				
Protected Phases	1	1				2
Permitted Phases						
Actuated Green, G (s)	21.5	21.5				21.5
Effective Green, g (s)	21.0	21.0				21.0
Actuated g/C Ratio	0.42	0.42				0.42
Clearance Time (s)	3.5	3.5				3.5
Lane Grp Cap (vph)	1442	665				782
v/s Ratio Prot	0.04	c0.06				c0.22
v/s Ratio Perm						
v/c Ratio	0.10	0.13				0.54
Uniform Delay, d1	8.8	8.9				10.9
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.1	0.4				2.6
Delay (s)	8.9	9.3				13.5
Level of Service	A	A				B
Approach Delay (s)	9.1		0.0			13.5
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	120	0	0	0	56	300
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	120	0	0	0	56	300
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					442	
pX, platoon unblocked						
vC, conflicting volume	412	0	172	112	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	412	0	172	112	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	77	100	100	100	97	
cM capacity (veh/h)	512	1085	632	751	1623	

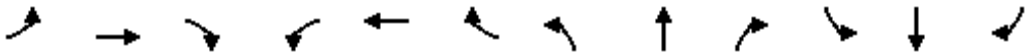
Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	120	156	200
Volume Left	0	56	0
Volume Right	0	100	200
cSH	512	1623	1700
Volume to Capacity	0.23	0.03	0.12
Queue Length 95th (ft)	23	3	0
Control Delay (s)	14.2	2.8	0.0
Lane LOS	B	A	
Approach Delay (s)	14.2	1.2	
Approach LOS	B		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		



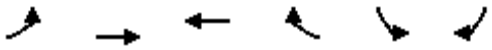
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	323	79	0	0	0	0	14	193	2	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	3.5		4.0	
Lane Util. Factor		0.91						0.95	0.95		1.00	
Frpb, ped/bikes		0.98						0.93	0.92		1.00	
Flpb, ped/bikes		1.00						1.00	1.00		0.99	
Frt		0.97						0.87	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		4849						1429	1380		1843	
Flt Permitted		1.00						1.00	1.00		0.98	
Satd. Flow (perm)		4849						1429	1380		1822	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	323	79	0	0	0	0	14	193	2	19	0
RTOR Reduction (vph)	0	44	0	0	0	0	0	64	70	0	0	0
Lane Group Flow (vph)	0	362	0	0	0	0	0	41	32	0	21	0
Confl. Peds. (#/hr)	72		72						72	72		
Turn Type	Perm								Perm	Perm		
Protected Phases		1						2			2	
Permitted Phases	1								2	2		
Actuated Green, G (s)		22.5						15.5	15.5		15.5	
Effective Green, g (s)		22.0						15.0	15.5		15.0	
Actuated g/C Ratio		0.44						0.30	0.31		0.30	
Clearance Time (s)		3.5						3.5	3.5		3.5	
Lane Grp Cap (vph)		2134						429	428		547	
v/s Ratio Prot								c0.03				
v/s Ratio Perm		0.07							0.02		0.01	
v/c Ratio		0.17						0.10	0.07		0.04	
Uniform Delay, d1		8.5						12.6	12.2		12.4	
Progression Factor		0.43						0.64	0.67		1.00	
Incremental Delay, d2		0.2						0.4	0.3		0.1	
Delay (s)		3.8						8.5	8.5		12.5	
Level of Service		A						A	A		B	
Approach Delay (s)		3.8			0.0			8.5			12.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	453	83	0	0	0	0	0	0	145	601	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.91	0.91	
Frpb, ped/bikes		0.99								1.00	1.00	
Flpb, ped/bikes		1.00								0.93	1.00	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4904								1494	3380	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4904								1494	3380	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	453	83	0	0	0	0	0	0	145	601	0
RTOR Reduction (vph)	0	51	0	0	0	0	0	0	0	83	3	0
Lane Group Flow (vph)	0	485	0	0	0	0	0	0	0	47	613	0
Confl. Peds. (#/hr)			72							72		
Turn Type										Perm		
Protected Phases		1									2	
Permitted Phases										2		
Actuated Green, G (s)		19.5								18.5	18.5	
Effective Green, g (s)		19.0								18.0	18.0	
Actuated g/C Ratio		0.38								0.36	0.36	
Clearance Time (s)		3.5								3.5	3.5	
Lane Grp Cap (vph)		1864								538	1217	
v/s Ratio Prot		c0.10										
v/s Ratio Perm										0.03	0.18	
v/c Ratio		0.26								0.09	0.50	
Uniform Delay, d1		10.7								10.6	12.5	
Progression Factor		0.59								2.21	1.29	
Incremental Delay, d2		0.3								0.3	1.4	
Delay (s)		6.6								23.7	17.5	
Level of Service		A								C	B	
Approach Delay (s)		6.6			0.0			0.0			18.6	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

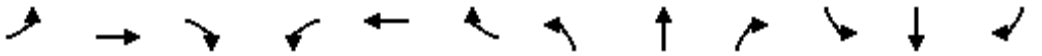


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	523	164	180	25	38	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.88	
Flt Protected	0.95	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1770	1863	1863	1583	1625	
Flt Permitted	0.95	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1770	1863	1863	1583	1625	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	523	164	180	25	38	417
RTOR Reduction (vph)	0	0	0	17	359	0
Lane Group Flow (vph)	523	164	180	8	96	0
Turn Type	Prot			pm+ov		
Protected Phases	7	4	8	1	1	
Permitted Phases				8		
Actuated Green, G (s)	35.9	40.9	13.7	23.8	10.1	
Effective Green, g (s)	36.4	40.9	13.7	23.8	10.1	
Actuated g/C Ratio	0.50	0.57	0.19	0.33	0.14	
Clearance Time (s)	4.5	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	4.5	4.5	3.0	3.0	
Lane Grp Cap (vph)	892	1055	354	610	227	
v/s Ratio Prot	c0.30	0.09	c0.10	0.00	c0.06	
v/s Ratio Perm				0.00		
v/c Ratio	0.59	0.16	0.51	0.01	0.42	
Uniform Delay, d1	12.6	7.4	26.2	16.3	28.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.1	2.0	0.0	1.3	
Delay (s)	13.4	7.6	28.2	16.3	29.7	
Level of Service	B	A	C	B	C	
Approach Delay (s)		12.0	26.8		29.7	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

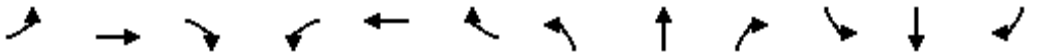
Movement	WBL	WBT	WBR	NBL2	NBL	SBR	SBR2
Lane Configurations							
Volume (vph)	10	1864	1270	5	5	27	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		0.91	0.88		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	0.85
Flt Protected		1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		5078	2787		1770	1583	1583
Flt Permitted		1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		5078	2787		1770	1583	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	1864	1270	5	5	27	54
RTOR Reduction (vph)	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	1874	1270	0	10	27	7
Confl. Peds. (#/hr)	72						
Parking (#/hr)	5						
Turn Type	Perm		Prot	Prot	Prot	custom	custom
Protected Phases		2	2	4	4	3	3
Permitted Phases	2						
Actuated Green, G (s)		73.2	73.2		1.0	13.8	13.8
Effective Green, g (s)		73.2	73.2		1.0	13.8	13.8
Actuated g/C Ratio		0.73	0.73		0.01	0.14	0.14
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		3717	2040		18	218	218
v/s Ratio Prot			c0.46		c0.01	c0.02	0.00
v/s Ratio Perm		0.37					
v/c Ratio		0.50	0.62		0.56	0.12	0.03
Uniform Delay, d1		5.7	6.6		49.3	37.8	37.3
Progression Factor		0.42	0.36		1.00	1.00	1.00
Incremental Delay, d2		0.3	1.0		32.3	0.3	0.1
Delay (s)		2.8	3.4		81.6	38.1	37.4
Level of Service		A	A		F	D	D
Approach Delay (s)		3.0					
Approach LOS		A					

Intersection Summary			
HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	2672	54	419	359	0	0	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				3.5
Lane Util. Factor					0.86		0.97	0.95				0.88
Frpb, ped/bikes					1.00		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					1.00		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6214		3433	3362				2787
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6214		3433	3362				2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2672	54	419	359	0	0	0	52
RTOR Reduction (vph)	0	0	0	0	3	0	2	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	2723	0	417	359	0	0	0	51
Confl. Peds. (#/hr)	72					72			144	144		
Confl. Bikes (#/hr)			10						10			
Parking (#/hr)					0			0				
Turn Type							Split					custom
Protected Phases					1		2	2				
Permitted Phases												2
Actuated Green, G (s)					57.0		34.5	34.5				34.5
Effective Green, g (s)					58.0		34.0	34.0				34.5
Actuated g/C Ratio					0.58		0.34	0.34				0.34
Clearance Time (s)					5.0		3.5	3.5				3.5
Lane Grp Cap (vph)					3604		1167	1143				962
v/s Ratio Prot					c0.44		c0.12	0.11				
v/s Ratio Perm												0.02
v/c Ratio					0.76		0.36	0.31				0.05
Uniform Delay, d1					15.7		24.8	24.4				21.8
Progression Factor					0.38		0.95	0.95				1.00
Incremental Delay, d2					0.7		0.8	0.7				0.1
Delay (s)					6.6		24.4	23.8				22.0
Level of Service					A		C	C				C
Approach Delay (s)		0.0			6.6			24.1			22.0	
Approach LOS		A			A			C			C	

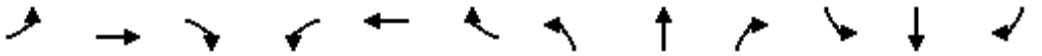
Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	41	2146	65	292	106	0	0	13	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.86		1.00	0.95			0.95	0.95
Frpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			0.86	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					6318		1770	3539			1527	1504
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					6318		1770	3539			1527	1504
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	41	2146	65	292	106	0	0	13	288
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	83	83
Lane Group Flow (vph)	0	0	0	0	2248	0	292	106	0	0	68	67
Confl. Peds. (#/hr)	72		72	72		72			72	72		
Confl. Bikes (#/hr)						10			10			
Parking (#/hr)				5		5						
Turn Type				Perm			custom					custom
Protected Phases					4		1	1			2	2
Permitted Phases				4			1					2
Actuated Green, G (s)					37.3		27.1	27.1			25.1	25.1
Effective Green, g (s)					36.8		26.6	26.6			24.6	24.6
Actuated g/C Ratio					0.37		0.27	0.27			0.25	0.25
Clearance Time (s)					3.5		3.5	3.5			3.5	3.5
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					2325		471	941			376	370
v/s Ratio Prot							c0.17	0.03			0.04	c0.04
v/s Ratio Perm					0.36							
v/c Ratio					0.97		0.62	0.11			0.18	0.18
Uniform Delay, d1					31.0		32.3	27.8			29.8	29.8
Progression Factor					0.55		0.98	1.00			0.71	0.71
Incremental Delay, d2					9.5		5.9	0.2			1.1	1.1
Delay (s)					26.5		37.7	27.9			22.2	22.2
Level of Service					C		D	C			C	C
Approach Delay (s)		0.0			26.5			35.1			22.2	
Approach LOS		A			C			D			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	191	1755	0	0	0	0	0	398	497
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.95	0.88
Frpb, ped/bikes				1.00	1.00						1.00	0.84
Flpb, ped/bikes				0.86	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1303	4796						3539	2346
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1303	4796						3539	2346
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	191	1755	0	0	0	0	0	398	497
RTOR Reduction (vph)	0	0	0	46	1	0	0	0	0	0	0	184
Lane Group Flow (vph)	0	0	0	126	1773	0	0	0	0	0	398	313
Confl. Peds. (#/hr)	72		72	72		72	72		72	72		72
Confl. Bikes (#/hr)						10						10
Turn Type				Perm								Perm
Protected Phases					1						2	
Permitted Phases				1								2
Actuated Green, G (s)				48.5	48.5						34.5	34.5
Effective Green, g (s)				48.0	48.0						34.0	34.0
Actuated g/C Ratio				0.48	0.48						0.34	0.34
Clearance Time (s)				3.5	3.5						3.5	3.5
Lane Grp Cap (vph)				625	2302						1203	798
v/s Ratio Prot											0.11	
v/s Ratio Perm				0.10	0.37							c0.13
v/c Ratio				0.20	0.77						0.33	0.39
Uniform Delay, d1				15.0	21.4						24.5	25.1
Progression Factor				1.00	1.00						0.78	0.72
Incremental Delay, d2				0.7	2.6						0.7	1.4
Delay (s)				15.7	24.0						19.8	19.3
Level of Service				B	C						B	B
Approach Delay (s)		0.0			23.3			0.0			19.5	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

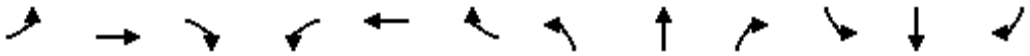
c Critical Lane Group

Movement	EBL	EBT	EBR	NBR	SBL	SBT	NEL	NER	NER2
Lane Configurations									
Volume (vph)	1	900	417	173	236	412	10	660	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86		0.88	0.97	1.00	1.00	0.91	
Frpb, ped/bikes		0.99		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	
Frt		0.95		0.85	1.00	1.00	0.85	0.85	
Flt Protected		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)		6012		2787	3433	1863	1589	2882	
Flt Permitted		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (perm)		6012		2787	3433	1863	1589	2882	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	900	417	173	236	412	10	660	324
RTOR Reduction (vph)	0	0	0	36	0	0	0	100	0
Lane Group Flow (vph)	0	1318	0	137	236	412	333	561	0
Confl. Peds. (#/hr)			36						36
Turn Type	Split			custom	Perm			Prot	
Protected Phases	2	2				1	3	3	
Permitted Phases				1	1				
Actuated Green, G (s)		21.0		16.5	16.5	16.5	21.0	21.0	
Effective Green, g (s)		21.0		16.0	16.0	16.0	21.0	21.0	
Actuated g/C Ratio		0.30		0.23	0.23	0.23	0.30	0.30	
Clearance Time (s)		4.0		3.5	3.5	3.5	4.0	4.0	
Vehicle Extension (s)		3.0		2.0	2.0	2.0	4.0	4.0	
Lane Grp Cap (vph)		1804		637	785	426	477	865	
v/s Ratio Prot		c0.22				c0.22	c0.21	0.19	
v/s Ratio Perm				0.05	0.07				
v/c Ratio		0.88dr		0.21	0.30	0.97	0.70	0.65	
Uniform Delay, d1		22.0		21.9	22.4	26.7	21.7	21.3	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.6		0.1	0.1	34.6	4.8	1.9	
Delay (s)		24.6		22.0	22.4	61.3	26.5	23.2	
Level of Service		C		C	C	E	C	C	
Approach Delay (s)		24.6				47.2	24.3		
Approach LOS		C				D	C		

Intersection Summary			
HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

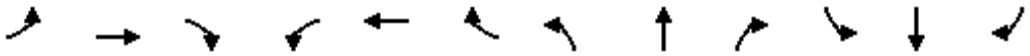
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



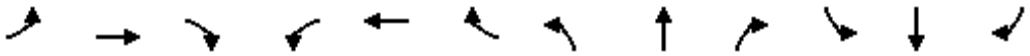
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	322	1571	102	0	0	0	0	395	338	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0	4.0			
Lane Util. Factor	0.81	0.81						0.91	0.91			
Frpb, ped/bikes	1.00	1.00						0.99	0.96			
Flpb, ped/bikes	1.00	1.00						1.00	1.00			
Frt	1.00	0.99						0.97	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1290	5952						3248	1387			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1290	5952						3248	1387			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	322	1571	102	0	0	0	0	395	338	0	0	0
RTOR Reduction (vph)	168	22	0	0	0	0	0	3	3	0	0	0
Lane Group Flow (vph)	122	1683	0	0	0	0	0	507	220	0	0	0
Confl. Peds. (#/hr)	36		36						36			
Parking (#/hr)	0											
Turn Type	Split								Perm			
Protected Phases	1	1						2				
Permitted Phases									2			
Actuated Green, G (s)	21.0	21.0						21.0	21.0			
Effective Green, g (s)	21.0	21.0						21.0	21.0			
Actuated g/C Ratio	0.42	0.42						0.42	0.42			
Clearance Time (s)	4.0	4.0						4.0	4.0			
Vehicle Extension (s)	0.2	0.2						0.2	0.2			
Lane Grp Cap (vph)	542	2500						1364	583			
v/s Ratio Prot	0.09	c0.28						0.16				
v/s Ratio Perm									c0.16			
v/c Ratio	0.22	0.67						0.37	0.38			
Uniform Delay, d1	9.3	11.7						10.0	10.0			
Progression Factor	1.00	1.00						1.00	1.00			
Incremental Delay, d2	1.0	1.5						0.1	0.1			
Delay (s)	10.2	13.2						10.0	10.1			
Level of Service	B	B						B	B			
Approach Delay (s)		12.8			0.0			10.1			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	1521	0	0	0	0	0	142	185	67	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0		
Lane Util. Factor	0.86	0.86						1.00		1.00		
Frpb, ped/bikes	1.00	1.00						0.98		1.00		
Flpb, ped/bikes	0.96	1.00						1.00		0.98		
Frt	1.00	1.00						0.92		1.00		
Flt Protected	0.95	1.00						1.00		0.95		
Satd. Flow (prot)	1463	4803						1680		1739		
Flt Permitted	0.95	1.00						1.00		0.47		
Satd. Flow (perm)	1463	4803						1680		853		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	1521	0	0	0	0	0	142	185	67	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	94	1532	0	0	0	0	0	318	0	67	0	0
Confl. Peds. (#/hr)	36								36	36		
Turn Type	Perm									D.Pm		
Protected Phases		1						2				
Permitted Phases	1							2		2		
Actuated Green, G (s)	24.5	24.5						18.5		18.5		
Effective Green, g (s)	24.0	24.0						18.0		18.0		
Actuated g/C Ratio	0.48	0.48						0.36		0.36		
Clearance Time (s)	3.5	3.5						3.5		3.5		
Lane Grp Cap (vph)	702	2305						605		307		
v/s Ratio Prot								c0.19				
v/s Ratio Perm	0.06	0.32								0.08		
v/c Ratio	0.13	0.66						0.53		0.22		
Uniform Delay, d1	7.2	9.9						12.6		11.1		
Progression Factor	0.42	0.34						1.00		1.23		
Incremental Delay, d2	0.3	1.2						3.2		1.2		
Delay (s)	3.3	4.6						15.9		14.9		
Level of Service	A	A						B		B		
Approach Delay (s)		4.5			0.0			15.9			14.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1644	307	0	0	0	0	0	0	120	439	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.91									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		4928									4988	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		4928									4988	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1644	307	0	0	0	0	0	0	120	439	4
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	0	83	0
Lane Group Flow (vph)	0	1897	0	0	0	0	0	0	0	0	480	0
Confl. Peds. (#/hr)			36							36		
Turn Type										Perm		
Protected Phases		1									2	
Permitted Phases										2		
Actuated Green, G (s)		21.5									16.5	
Effective Green, g (s)		21.0									16.0	
Actuated g/C Ratio		0.42									0.32	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		2070									1596	
v/s Ratio Prot		c0.38										
v/s Ratio Perm											0.10	
v/c Ratio		0.92									0.30	
Uniform Delay, d1		13.7									12.8	
Progression Factor		0.53									1.06	
Incremental Delay, d2		6.7									0.5	
Delay (s)		14.0									14.1	
Level of Service		B									B	
Approach Delay (s)		14.0			0.0			0.0			14.1	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	35	0	0	0	205	808
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	35	0	0	0	205	808

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total (vph)	35	474	539
Volume Left (vph)	0	205	0
Volume Right (vph)	0	269	539
Hadj (s)	0.03	-0.15	-0.67
Departure Headway (s)	5.5	4.5	3.9
Degree Utilization, x	0.05	0.59	0.59
Capacity (veh/h)	615	802	907
Control Delay (s)	8.8	12.4	11.2
Approach Delay (s)	8.8	11.8	
Approach LOS	A	B	

Intersection Summary			
Delay	11.7		
HCM Level of Service	B		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	NBR	SBL	SBT	NEL	NER	NER2
Lane Configurations									
Volume (vph)	8	1642	505	60	95	130	12	1538	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86		0.88	0.97	1.00	1.00	0.91	
Frpb, ped/bikes		0.99		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	
Frt		0.96		0.85	1.00	1.00	0.85	0.85	
Flt Protected		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)		6091		2787	3433	1863	1587	2882	
Flt Permitted		1.00		1.00	0.95	1.00	1.00	1.00	
Satd. Flow (perm)		6091		2787	3433	1863	1587	2882	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	1642	505	60	95	130	12	1538	444
RTOR Reduction (vph)	0	0	0	9	0	0	0	55	0
Lane Group Flow (vph)	0	2155	0	51	95	130	658	1281	0
Confl. Peds. (#/hr)			36						36
Turn Type	Split			custom	Perm			Prot	
Protected Phases	2	2				1	3	3	
Permitted Phases				1	1				
Actuated Green, G (s)		34.0		8.5	8.5	8.5	46.0	46.0	
Effective Green, g (s)		34.0		8.0	8.0	8.0	46.0	46.0	
Actuated g/C Ratio		0.34		0.08	0.08	0.08	0.46	0.46	
Clearance Time (s)		4.0		3.5	3.5	3.5	4.0	4.0	
Vehicle Extension (s)		3.0		2.0	2.0	2.0	4.0	4.0	
Lane Grp Cap (vph)		2071		223	275	149	730	1326	
v/s Ratio Prot		c0.35				c0.07	0.41	c0.44	
v/s Ratio Perm				0.02	0.03				
v/c Ratio		1.04		0.23	0.35	0.87	0.90	0.97	
Uniform Delay, d1		33.0		43.1	43.5	45.5	24.9	26.2	
Progression Factor		1.00		1.00	0.97	0.94	1.00	1.00	
Incremental Delay, d2		31.3		0.2	0.3	37.5	14.6	17.2	
Delay (s)		64.3		43.3	42.5	80.1	39.5	43.4	
Level of Service		E		D	D	F	D	D	
Approach Delay (s)		64.3				64.2	42.1		
Approach LOS		E				E	D		

Intersection Summary			
HCM Average Control Delay	54.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	120	0	0	0	56	300
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	120	0	0	0	56	300

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total (vph)	120	156	200
Volume Left (vph)	0	56	0
Volume Right (vph)	0	100	200
Hadj (s)	0.03	-0.24	-0.67
Departure Headway (s)	4.7	4.6	4.1
Degree Utilization, x	0.16	0.20	0.23
Capacity (veh/h)	727	768	847
Control Delay (s)	8.5	7.5	7.2
Approach Delay (s)	8.5	7.3	
Approach LOS	A	A	

Intersection Summary			
Delay	7.6		
HCM Level of Service	A		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		

Freeway Mainline Operations – Existing Conditions						
Location	**AM Peak Hour**			**PM Peak Hour**		
	Volume	**V/C[1]**	**LOS[2]**	**Volume**	**V/C[1]**	**LOS[2]**
Northbound I-5						
South of I Street on-ramp	6,689	0.83	D	7,836	0.97	E
North of I Street on-ramp	6,965	0.73	C	9,132	0.96	E
Southbound I-5						
North of J Street off-ramp	7,667	0.80	D	6,913	0.72	C
North of I Street on-ramp	5,730	0.71	C	5,646	0.70	C

Source: Dowling Associates, Inc., 2008.

[1] V/C = Volume / Capacity

[2] LOS = Level of Service

Note: **Bold** values show substandard traffic operations.

Freeway Interchange Operations – Existing Conditions						
Ramp	**AM Peak Hour**			**PM Peak Hour**		
	LOS[1]	**Density[2] (Flow)**	**Volume**	**LOS[1]**	**Density[2] (Flow)**	**Volume**
Northbound I-5						
P Street to J Street weave	E	36.27	9,170	D	31.34	8,378
I Street on-ramp	B	14.35	276	C	24.73	1,296
Southbound I-5						
J Street off-ramp	B	19.92	1,937	B	17.96	1,267
I Street to Q Street weave	C	23.10	6,620	C	25.67	7,265

Source: Dowling Associates, Inc., 2008.

[1] LOS = Level of Service

[2] Numbers with decimals indicate the density of passenger vehicles per mile per lane in the merge or diverge area. Whole numbers indicate the ramp flow rate in passenger car equivalents where a lane is added to the freeway at an on-ramp.

Note: **Bold** values show substandard traffic operations.

Capacity Analysis of Freeway Mainline Segments
2000 Highway Capacity Manual
Capacity based on 2010 vphpl for freeway lanes, 1500 vphpl for auxiliary lanes

Mainline Segment	Dir	Frwy Lanes	Aux Lanes	Exising Conditions Without Project AM	PM
Freeway Traffic Volume					
I-5, South of I Street on-ramp	NB	4	0	6,689	7,836
I-5, North of I Street on-ramp	NB	4	1	6,965	9,132
Volume to Capacity (V/C)					
I-5, South of I Street on-ramp	NB	4	0	0.83	0.97
I-5, North of I Street on-ramp	NB	4	1	0.73	0.96
Level of Service:					
I-5, South of I Street on-ramp	NB			D	*E*
I-5, North of I Street on-ramp	NB			C	*E*

Freeway Capacity Source: 2000 Highway Capacity Manual

Ideal Freeway Capacity =	2400	(p. 23-4)	V/C	LOS
Free-Flow Speed =	70	mph	0.32	A
Peak Hour Factor =	0.92		0.53	B
I-5 Percent Trucks =	9.6%		0.74	C
I-5Actual Capacity / Ideal Capacity =	84%		0.90	D
I-5Adjusted Freeway Capacity =	2010		1.00	E

Capacity Analysis of Freeway Mainline Segments
2000 Highway Capacity Manual

Capacity based on 2010 vphpl for freeway lanes, 1500 vphpl for auxiliary lanes

Mainline Segment	Dir	Frwy Lanes	Aux Lanes	Exising Conditions Without Project AM	PM
Freeway Traffic Volume					
I-5, North of J Street off-ramp	SB	4	1	7,667	6,913
I-5, North of I Street on-ramp	SB	4	0	5,730	5,646
Volume to Capacity (V/C)					
I-5, North of J Street off-ramp	SB	4	1	0.80	0.72
I-5, North of I Street on-ramp	SB	4	0	0.71	0.70
Level of Service:					
I-5, North of J Street off-ramp	SB			D	C
I-5, North of I Street on-ramp	SB			C	C

Freeway Capacity Source: 2000 Highway Capacity Manual

Ideal Freeway Capacity =	2400	(p. 23-4)	V/C	LOS
Free-Flow Speed =	70	mph	0.32	A
Peak Hour Factor =	0.92		0.53	B
Percent Trucks =	9.6%		0.74	C
Actual Capacity / Ideal Capacity =	84%		0.90	D
Adjusted Freeway Capacity =	2010		1.00	E

NB I-5 - Weaving from P St to J St

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Weaving Analysis Type B

Type	B
Existing Upstrm Frwy Lanes / Aux. Lanes	4
Existing Dnstrm Frwy Lanes / Aux. Lanes	4
Sacramento Factor. [Note: Capacity is fixed hence adjust volume]	1

	Existing Without Project	
	AM	PM
PHF (Peak Hour Factor) =	0.92	0.92
f_{HV} (Adjustment factor for heavy vehicles) =	1	1
f_p (Adjustment factor for driver population) =	1	1
P_T (Proportioin of trucks/buses in the traffic stream) =	0.01	0.01
P_R (Proportioin of RVs in the traffic stream) =	0	0
E_T (Passenger-car equivalents for trucks/buses in the traffic stream) =	1.5	1.5
E_R (Passenger-car equivalents for RVs in the traffic stream) =	1.5	1.5
L - Length of weaving segment (ft)	1000	1000
N, Total number of lanes in the weaving segment	5	5
N_w, Number of lanes to be used by weaving vehicles if unconstrained operation is to be achived. note: Type-B, Ex 24-7	1.86	0.36
$N_{w(max)}$, Maximum number of lanes that can be used by weaving vehicles for a given configuration. note: A:1.4, B:3.5, C:3.0	3.5	3.5
N_{nw}, Number of lanes used by nonweaving vehicles. note: Nw < Nw(max) implies unconstrained, and Nw >= Nw(max) implies constrained	4	4
v, Total flow rate in the weaving segment (pc/h)	9170	8378
v_{o1}, Larger of the two outer, or nonweaving, flow rates in the weaving segment (pc/h)	6798	6374
v_{o2}, Smaller of the two outer, or nonweaving, flow rates in the weaving segment (pc/h)	0	0
v_{w1}, Larger of two weaving flow rates in the weaving segment (pc/h)	2155	1077
v_{w2}, Smaller of two weaving flow rates in the weaving segment (pc/h)	217	927
v_w, Total weaving flow rate in the weaving segment (pc/h) ($v_w = v_{w1} + v_{w2}$)	2372	2004
v_{nw}, Total nonweaving flow rate in the weaving segment (pc/h) ($v_{nw} = v_{o1} + v_{o2}$)	6798	6374
VR, Volume ratio; the ratio of weaving flow rate to total flow rate in the weaving segment ($VR = v_w/v$)	0.26	0.24
R, Weaving ratio; the ratio of the smaller weaving flow rate to total weaving flow rate (R = vw2/vw)	0.09	0.46
S_w, Speed of weaving vehicles in the weaving segment (mi/h)	45.39	38.11
S_{nw}, Speed of nonweaving vehicles in the weaving segment (mi/h)	52.67	61.22
S, Speed of all vehicles in the weaving segment (mi/h) [Eq 24-5, HCM2000]	50.57	53.46
D, Density of all vehicles in the weaving segment (pc/mi/ln) [Eq 24-6, HCM2000]	36.27	31.34
W_w, Weaving intensity factor for prediction of weaving speed	0.81	1.38
W_{nw}, Weaving intensity factor for prediction of nonweaving speed	0.46	0.19
S_{min}, Minimum speed expected in a weaving segment (mi/h)	15	15
S_{max}, Maximum speed expected in a weaving segment (mi/h)	70	70
a (weaving) [Exhibit 24-6, AM:Unconstrainted, PM:Constrainted]	0.08	0.15
b (weaving)	2.2	2.2
c (weaving)	0.7	0.7
d (weaving)	0.5	0.5
a (non-weaving)	0.002	0.001
b (non-weaving)	6	6
c (non-weaving)	1	1
d (non-weaving)	0.5	0.5
LOS	**E**	**D**

I-5 NB On-Ramp from I St

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 8 lane freeway, 2 Lane On-Ramp (Pfm=0.209 for 2-lane ramp)

Existing Upstrm Frwy Lanes / Aux. Lanes	4
Existing Dnstrm Frwy Lanes / Aux. Lanes	5

	Existing Without Project	
	AM	PM
Freeway Volume (Upstream):	6,689	7,836
Ramp Volume:	276	1,296
L_{Aeff} (Effective length of the acceleration lane, ft)	1,000	1,000
Sacto Adjusted Freeway Volume (Upstream):	7,297	8,548
Sacto Adjusted Ramp Volume:	301	1,414
V_{FO} Capacity (downstream segment capacity)	12,000	12,000
Downstream Freeway V/C:	0.69	0.90
V_{12} (Maximum total flow entering the ramp, diverge influence area, two-lane volume):	1,658	1,942
V_{R12} (Maximum total flow entering the ramp, merge influence area, two-lane volume):	1,985	3,479
V_{R12} Capacity:	4,600	4,600
V_{R12} V/C:	0.43	0.76
D_R (Density of merge influence area (pc/mi/ln))	14.35	24.73
v_F (Maximum total flow approaching a major diverge area on the freeway) =	7,932	9,291
v_R (Maximum flow on a ramp) =	327	1,537
V_{FO} (Maximum total departing from a merge or diverge area on the freeway)	8,259	10,828
Level of Service:	B	C

Proportion in lanes 1,2 (P_{FM}):	0.209
PHF (Peak Hour Factor) =	0.92
f_{HV} (Adjustment factor for heavy vehicles) =	1
f_p (Adjustment factor for driver population) =	1
P_T (Proportioin of trucks/buses in the traffic stream) =	0.01
P_R (Proportioin of RVs in the traffic stream) =	0
E_T (Passenger-car equivalents for trucks/buses in the traffic stream) =	1.5
E_R (Passenger-car equivalents for RVs in the traffic stream) =	1.5

I-5 SB off-ramp to J St

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: Major Diverge, 2 Lane Off-Ramp, P_{FD}=0.260

Existing Upstrm Frwy Lanes / Aux. Lanes	5
Existing Dnstrm Frwy Lanes / Aux. Lanes	4

	Existing Without Project	
	AM	PM
Freeway Volume (Upstream):	7,667	6,913
Ramp Volume:	1,937	1,267
Ramp Design Speed (mph):	40	40
Sacto Adjusted Freeway Volume (Upstream):	8,364	7,541
Sacto Adjusted Ramp Volume:	2,113	1,382
Sacto Adjusted Freeway Volume (Downstream):	6,251	6,159
v_F (Maximum total flow approaching a major diverge area on the freeway) =	9,137	8,238
V_{R12} (Off-ramp demand flow rate (pc/h)) =	2,308	1,510
Upstream Freeway Capacity:	12,000	12,000
Upstream Freeway V/C:	0.76	0.69
Downstream Freeway Capacity:	9,600	9,600
Downstream Freeway V/C:	0.65	0.64
Ramp Capacity:	3,800	3,800
Ramp V/C:	0.61	0.40
V_{12} (Maximum total flow entering the ramp, diverge influence area, two-lane volume):	4,084	3,259
Density (pc/mi/ln):	19.92	17.96
V5	1,827	1,648
VF4eff	7,309	6,590
Level of Service:	B	B

Proportion in lanes 1,2 (P_{FD}):	0.260
PHF (Peak Hour Factor) =	0.92
f_{HV} (Adjustment factor for heavy vehicles) =	1.00
f_p (Adjustment factor for driver population) =	1
P_T (Proportioin of trucks/buses in the traffic stream) =	0.01
P_R (Proportioin of RVs in the traffic stream) =	0
E_T (Passenger-car equivalents for trucks/buses in the traffic stream) =	1.5
E_R (Passenger-car equivalents for RVs in the traffic stream) =	1.5

SB I-5 - Weaving from I St to Q St

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Weaving Analysis Type B

Type	B
Existing Upstrm Frwy Lanes / Aux. Lanes	4
Existing Dnstrm Frwy Lanes / Aux. Lanes	5
Sacramento Factor. [Note: Capacity is fixed hence adjust volume]	1

	Existing Without Project	
	AM	PM
PHF (Peak Hour Factor) =	0.92	0.92
f_{HV} (Adjustment factor for heavy vehicles) =	1	1
f_p (Adjustment factor for driver population) =	1	1
P_T (Proportioin of trucks/buses in the traffic stream) =	0.01	0.01
P_R (Proportioin of RVs in the traffic stream) =	0	0
E_T (Passenger-car equivalents for trucks/buses in the traffic stream) =	1.5	1.5
E_R (Passenger-car equivalents for RVs in the traffic stream) =	1.5	1.5
L - Length of weaving segment (ft)	1000	1000
N, Total number of lanes in the weaving segment	5	5
N_w, Number of lanes to be used by weaving vehicles if unconstrained operation is to be achived. note: Type-B, Ex 24-7	1.43	1.41
$N_{w(max)}$, Maximum number of lanes that can be used by weaving vehicles for a given configuration. note: A:1.4, B:3.5, C:3.0	3.5	3.5
N_{nw}, Number of lanes used by nonweaving vehicles. note: Nw < Nw(max) implies unconstrained, and Nw >= Nw(max) implies constrained	4	4
v, Total flow rate in the weaving segment (pc/h)	6620	7265
v_{o1}, Larger of the two outer, or nonweaving, flow rates in the weaving segment (pc/h)	5354	5901
v_{o2}, Smaller of the two outer, or nonweaving, flow rates in the weaving segment (pc/h)	0	0
v_{w1}, Larger of two weaving flow rates in the weaving segment (pc/h)	874	1128
v_{w2}, Smaller of two weaving flow rates in the weaving segment (pc/h)	392	236
v_w, Total weaving flow rate in the weaving segment (pc/h) ($v_w = v_{w1} + v_{w2}$)	1266	1364
v_{nw}, Total nonweaving flow rate in the weaving segment (pc/h) ($v_{nw} = v_{o1} + v_{o2}$)	5354	5901
VR, Volume ratio; the ratio of weaving flow rate to total flow rate in the weaving segment ($VR = v_w/v$)	0.19	0.19
R, Weaving ratio; the ratio of the smaller weaving flow rate to total weaving flow rate (R = vw2/vw)	0.31	0.17
S_w, Speed of weaving vehicles in the weaving segment (mi/h)	50.03	49.16
S_{nw}, Speed of nonweaving vehicles in the weaving segment (mi/h)	59.35	58.65
S, Speed of all vehicles in the weaving segment (mi/h) [Eq 24-5, HCM2000]	57.31	56.6
D, Density of all vehicles in the weaving segment (pc/mi/ln) [Eq 24-6, HCM2000]	23.1	25.67
W_w, Weaving intensity factor for prediction of weaving speed	0.57	0.61
W_{nw}, Weaving intensity factor for prediction of nonweaving speed	0.24	0.26
S_{min}, Minimum speed expected in a weaving segment (mi/h)	15	15
S_{max}, Maximum speed expected in a weaving segment (mi/h)	70	70
a (weaving) [Exhibit 24-6, Unconstrainted]	0.08	0.08
b (weaving)	2.2	2.2
c (weaving)	0.7	0.7
d (weaving)	0.5	0.5
a (non-weaving)	0.002	0.002
b (non-weaving)	6	6
c (non-weaving)	1	1
d (non-weaving)	0.5	0.5
LOS	**C**	**C**

Freeway Mainline Operations – Baseline Conditions				
Location	**Time Period**	**Measure**	**Baseline**	**Phase 2 Project**
Northbound I-5				
South of I Street on-ramp	AM Peak Hour	Vol	6,755	6,755
		V/C[1]	0.74	0.74
		LOS[2]	C	C
	PM Peak Hour	Vol	7,957	7,957
		V/C[1]	0.97	0.97
		LOS[2]	E	E
North of I Street on-ramp	AM Peak Hour	Vol	7,040	7,044
		V/C[1]	0.84	0.84
		LOS[2]	D	D
	PM Peak Hour	Vol	9,268	9,281
		V/C[1]	0.99	0.99
		LOS[2]	E	E
Southbound I-5				
North of J Street off-ramp	AM Peak Hour	Vol	7,674	7,688
		V/C[1]	0.80	0.81
		LOS[2]	D	D
	PM Peak Hour	Vol	7,089	7,092
		V/C[1]	0.74	0.74
		LOS[2]	D	D
North of I Street on-ramp	AM Peak Hour	Vol	5,748	5,748
		V/C[1]	0.95	0.95
		LOS[2]	E	E
	PM Peak Hour	Vol	5,794	5,794
		V/C[1]	0.96	0.96
		LOS[2]	E	E

Source: Dowling Associates, Inc., 2008.

[1] V/C = Volume / Capacity

[2] LOS = Level of Service

Note: **Bold** values show substandard traffic operations.

Freeway Interchange Operations – Baseline Conditions				
Ramp	**Time Period**	**Measure**	**Baseline**	**Phase 2 Project**
Northbound I-5				
P Street to J Street weave	AM Peak Hour	LOS[1]	E	E
		Density[2]	36.67	36.72
		Volume	9242	9254
	PM Peak Hour	LOS[1]	D	D
		Density[2]	31.93	31.95
		Volume	8509	8512
I Street on-ramp	AM Peak Hour	LOS[1]	B	B
		Density[2]	14.54	14.57
		Volume	285	289
	PM Peak Hour	LOS[1]	C	C
		Density[2]	25.08	25.19
		Volume	1311	1324
Southbound I-5				
J Street off-ramp	AM Peak Hour	LOS[1]	B	B
		Density[2]	19.94	19.97
		Volume	1937	1951
	PM Peak Hour	LOS[1]	B	B
		Density[2]	18.42	18.42
		Volume	1295	1298
I Street to Q Street weave	AM Peak Hour	LOS[1]	C	C
		Density[2]	23.17	23.19
		Volume	6640	6644
	PM Peak Hour	LOS[1]	C	C
		Density[2]	26.44	26.49
		Volume	7445	7457

Source: Dowling Associates, Inc., 2008.

[1] LOS = Level of Service

[2] Numbers with decimals indicate the density of passenger vehicles per mile per lane in the merge or diverge area. Whole numbers indicate the ramp flow rate in passenger car equivalents where a lane is added to the freeway at an on-ramp.

Note: **Bold** values show substandard traffic operations.

Capacity Analysis of Freeway Mainline Segments
2000 Highway Capacity Manual
Capacity based on 2010 vphpl for freeway lanes, 1500 vphpl for auxiliary lanes

Mainline Segment	Dir	Frwy Lanes	Aux Lanes	Baseline Conditions Without Project AM	Baseline Conditions Without Project PM	Phase 2 Project Without Project AM	Phase 2 Project Without Project PM
Freeway Traffic Volume							
I-5, South of I Street on-ramp	NB	4	0	6,755	7,957	6,755	7,957
I-5, North of I Street on-ramp	NB	4	1	7,040	9,268	7,044	9,281
Volume to Capacity (V/C)							
I-5, South of I Street on-ramp	NB	4	0	0.84	0.99	0.84	0.99
I-5, North of I Street on-ramp	NB	4	1	0.74	0.97	0.74	0.97
Level of Service:							
I-5, South of I Street on-ramp	NB			D	*E*	D	*E*
I-5, North of I Street on-ramp	NB			C	*E*	C	*E*

Freeway Capacity Source: 2000 Highway Capacity Manual

Ideal Freeway Capacity =	2400 (p. 23-4)	V/C	LOS
Free-Flow Speed =	70 mph	0.32	A
Peak Hour Factor =	0.92	0.53	B
I-5 Percent Trucks =	9.6%	0.74	C
I-5Actual Capacity / Ideal Capacity =	84%	0.90	D
I-5Adjusted Freeway Capacity =	2010	1.00	E

Capacity Analysis of Freeway Mainline Segments
2000 Highway Capacity Manual
Capacity based on 2010 vphpl for freeway lanes, 1500 vphpl for auxiliary lanes

Mainline Segment	Dir	Frwy Lanes	Aux Lanes	Baseline Conditions Without Project AM	Baseline Conditions Without Project PM	Phase 2 Project Without Project AM	Phase 2 Project Without Project PM
Freeway Traffic Volume							
I-5, North of J Street off-ramp	SB	4	1	7,674	7,089	7,688	7,092
I-5, North of I Street on-ramp	SB	3	0	5,748	5,794	5,748	5,794
Volume to Capacity (V/C)							
I-5, North of J Street off-ramp	SB	4	1	0.80	0.74	0.81	0.74
I-5, North of I Street on-ramp	SB	3	0	0.95	0.96	0.95	0.96
Level of Service:							
I-5, North of J Street off-ramp	SB			D	D	D	D
I-5, North of I Street on-ramp	SB			*E*	*E*	*E*	*E*

Freeway Capacity Source: 2000 Highway Capacity Manual

Ideal Freeway Capacity =	2400	(p. 23-4)	V/C	LOS
Free-Flow Speed =	70	mph	0.32	A
Peak Hour Factor =	0.92		0.53	B
Percent Trucks =	9.6%		0.74	C
Actual Capacity / Ideal Capacity =	84%		0.90	D
Adjusted Freeway Capacity =	2010		1.00	E

NB I-5 - Weaving from P St to J St

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Weaving Analysis Type B

Type	B
Existing Upstrm Frwy Lanes / Aux. Lanes	4
Existing Dnstrm Frwy Lanes / Aux. Lanes	4
Sacramento Factor. [Note: Capacity is fixed hence adjust volume]	1

	Baseline Without Project		Baseline Phase 2 Project	
	AM	PM	AM	PM
PHF (Peak Hour Factor) =	0.92	0.92	0.92	0.92
f_{HV} (Adjustment factor for heavy vehicles) =	1	1	1	1
f_p (Adjustment factor for driver population) =	1	1	1	1
P_T (Proportioin of trucks/buses in the traffic stream) =	0.01	0.01	0.01	0.01
P_R (Proportioin of RVs in the traffic stream) =	0	0	0	0
E_T (Passenger-car equivalents for trucks/buses in the traffic stream) =	1.5	1.5	1.5	1.5
E_R (Passenger-car equivalents for RVs in the traffic stream) =	1.5	1.5	1.5	1.5
L - Length of weaving segment (ft)	1000	1000	1000	1000
N, Total number of lanes in the weaving segment	5	5	5	5
N_w, Number of lanes to be used by weaving vehicles if unconstrained operation is to be achived. note: Type-B, Ex 24-7	1.88	0.39	1.88	0.39
$N_{w(max)}$, Maximum number of lanes that can be used by weaving vehicles for a given configuration. note: A:1.4, B:3.5, C:3.0	3.5	3.5	3.5	3.5
N_{nw}, Number of lanes used by nonweaving vehicles. note: Nw < Nw(max) implies unconstrained, and Nw >= Nw(max) implies constrained	4	4	4	4
v, Total flow rate in the weaving segment (pc/h)	9242	8509	9254	8512
v_{o1}, Larger of the two outer, or nonweaving, flow rates in the weaving segment (pc/h)	6870	6505	6870	6505
v_{o2}, Smaller of the two outer, or nonweaving, flow rates in the weaving segment (pc/h)	0	0	0	0
v_{w1}, Larger of two weaving flow rates in the weaving segment (pc/h)	2155	1077	2167	1080
v_{w2}, Smaller of two weaving flow rates in the weaving segment (pc/h)	217	927	217	927
v_w, Total weaving flow rate in the weaving segment (pc/h) ($v_w = v_{w1} + v_{w2}$)	2372	2004	2384	2007
v_{nw}, Total nonweaving flow rate in the weaving segment (pc/h) ($v_{nw} = v_{o1} + v_{o2}$)	6870	6505	6870	6505
VR, Volume ratio; the ratio of weaving flow rate to total flow rate in the weaving segment ($VR = v_w/v$)	0.26	0.24	0.26	0.24
R, Weaving ratio; the ratio of the smaller weaving flow rate to total weaving flow rate (R = vw2/vw)	0.09	0.46	0.09	0.46
S_w, Speed of weaving vehicles in the weaving segment (mi/h)	45.39	38.01	45.39	38.01
S_{nw}, Speed of nonweaving vehicles in the weaving segment (mi/h)	52.41	60.83	52.41	60.83
S, Speed of all vehicles in the weaving segment (mi/h) [Eq 24-5, HCM2000]	50.41	53.29	50.4	53.29
D, Density of all vehicles in the weaving segment (pc/mi/ln) [Eq 24-6, HCM2000]	36.67	31.93	36.72	31.95
W_w, Weaving intensity factor for prediction of weaving speed	0.81	1.39	0.81	1.39
W_{nw}, Weaving intensity factor for prediction of nonweaving speed	0.47	0.2	0.47	0.2
S_{min}, Minimum speed expected in a weaving segment (mi/h)	15	15	15	15
S_{max}, Maximum speed expected in a weaving segment (mi/h)	70	70	70	70
a (weaving) [Exhibit 24-6, AM:Unconstrainted, PM:Constrainted]	0.08	0.15	0.08	0.15
b (weaving)	2.2	2.2	2.2	2.2
c (weaving)	0.7	0.7	0.7	0.7
d (weaving)	0.5	0.5	0.5	0.5
a (non-weaving)	0.002	0.001	0.002	0.001
b (non-weaving)	6	6	6	6
c (non-weaving)	1	1	1	1
d (non-weaving)	0.5	0.5	0.5	0.5
LOS	**E**	**D**	**E**	**D**

I-5 NB On-Ramp from I St

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 8 lane freeway, 2 Lane On-Ramp (Pfm=0.209 for 2-lane ramp)

Existing Upstrm Frwy Lanes / Aux. Lanes	4
Existing Dnstrm Frwy Lanes / Aux. Lanes	5

	Baseline Without Project		Baseline Phase 2 Project	
	AM	PM	AM	PM
Freeway Volume (Upstream):	6,755	7,957	6,755	7,957
Ramp Volume:	285	1,311	289	1,324
L_{Aeff} (Effective length of the acceleration lane, ft)	1,000	1,000	1,000	1,000
Sacto Adjusted Freeway Volume (Upstream):	7,369	8,680	7,369	8,680
Sacto Adjusted Ramp Volume:	311	1,430	315	1,444
V_{FO} Capacity (downstream segment capacity)	12,000	12,000	12,000	12,000
Downstream Freeway V/C:	0.70	0.92	0.70	0.92
V_{12} (Maximum total flow entering the ramp, diverge influence area, two-lane volume):	1,674	1,972	1,674	1,972
V_{R12} (Maximum total flow entering the ramp, merge influence area, two-lane volume):	2,012	3,526	2,016	3,542
V_{R12} Capacity:	4,600	4,600	4,600	4,600
V_{R12} V/C:	0.44	0.77	0.44	0.77
D_R (Density of merge influence area (pc/mi/ln))	14.54	25.08	14.57	25.19
v_F (Maximum total flow approaching a major diverge area on the freeway) =	8,010	9,435	8,010	9,435
v_R (Maximum flow on a ramp) =	338	1,554	342	1,570
V_{FO} (Maximum total departing from a merge or diverge area on the freeway)	8,348	10,989	8,352	11,005
Level of Service:	B	C	B	C

Proportion in lanes 1,2 (P_{FM}):	0.209
PHF (Peak Hour Factor) =	0.92
f_{HV} (Adjustment factor for heavy vehicles) =	1
f_p (Adjustment factor for driver population) =	1
P_T (Proportioin of trucks/buses in the traffic stream) =	0.01
P_R (Proportioin of RVs in the traffic stream) =	0
E_T (Passenger-car equivalents for trucks/buses in the traffic stream) =	1.5
E_R (Passenger-car equivalents for RVs in the traffic stream) =	1.5

I-5 SB off-ramp to J St

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: Major Diverge, 2 Lane Off-Ramp, P_{FD}=0.260

Existing Upstrm Frwy Lanes / Aux. Lanes	5
Existing Dnstrm Frwy Lanes / Aux. Lanes	4

	Baseline Without Project		Baseline Phase 2 Project	
	AM	PM	AM	PM
Freeway Volume (Upstream):	7,674	7,089	7,688	7,092
Ramp Volume:	1,937	1,295	1,951	1,298
Ramp Design Speed (mph):	40	40	40	40
Sacto Adjusted Freeway Volume (Upstream):	8,372	7,733	8,387	7,737
Sacto Adjusted Ramp Volume:	2,113	1,413	2,128	1,416
Sacto Adjusted Freeway Volume (Downstream):	6,259	6,320	6,259	6,321
v_F (Maximum total flow approaching a major diverge area on the freeway) =	9,146	8,447	9,162	8,452
V_{R12} (Off-ramp demand flow rate (pc/h)) =	2,308	1,544	2,325	1,547
Upstream Freeway Capacity:	12,000	12,000	12,000	12,000
Upstream Freeway V/C:	0.76	0.70	0.76	0.70
Downstream Freeway Capacity:	9,600	9,600	9,600	9,600
Downstream Freeway V/C:	0.65	0.66	0.65	0.66
Ramp Capacity:	3,800	3,800	3,800	3,800
Ramp V/C:	0.61	0.41	0.61	0.41
V_{12} (Maximum total flow entering the ramp, diverge influence area, two-lane volume):	4,086	3,339	4,102	3,342
Density (pc/mi/ln):	19.94	18.42	19.97	18.42
V5	1,829	1,689	1,832	1,690
VF4eff	7,316	6,758	7,330	6,761
Level of Service:	B	B	B	B

Proportion in lanes 1,2 (P_{FD}):	0.260
PHF (Peak Hour Factor) =	0.92
f_{HV} (Adjustment factor for heavy vehicles) =	1.00
f_p (Adjustment factor for driver population) =	1
P_T (Proportioin of trucks/buses in the traffic stream) =	0.01
P_R (Proportioin of RVs in the traffic stream) =	0
E_T (Passenger-car equivalents for trucks/buses in the traffic stream) =	1.5
E_R (Passenger-car equivalents for RVs in the traffic stream) =	1.5

SB I-5 - Weaving from I St to Q St

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Weaving Analysis Type B

Type	B
Existing Upstrm Frwy Lanes / Aux. Lanes	4
Existing Dnstrm Frwy Lanes / Aux. Lanes	5
Sacramento Factor. [Note: Capacity is fixed hence adjust volume]	1

	Baseline Without Project		Baseline Phase 2 Project	
	AM	PM	AM	PM
PHF (Peak Hour Factor) =	0.92	0.92	0.92	0.92
f_{HV} (Adjustment factor for heavy vehicles) =	1	1	1	1
f_p (Adjustment factor for driver population) =	1	1	1	1
P_T (Proportioin of trucks/buses in the traffic stream) =	0.01	0.01	0.01	0.01
P_R (Proportioin of RVs in the traffic stream) =	0	0	0	0
E_T (Passenger-car equivalents for trucks/buses in the traffic stream) =	1.5	1.5	1.5	1.5
E_R (Passenger-car equivalents for RVs in the traffic stream) =	1.5	1.5	1.5	1.5
L - Length of weaving segment (ft)	1000	1000	1000	1000
N, Total number of lanes in the weaving segment	5	5	5	5
N_w, Number of lanes to be used by weaving vehicles if unconstrained operation is to be achived. note: Type-B, Ex 24-7	1.43	1.42	1.43	1.42
$N_{w(max)}$, Maximum number of lanes that can be used by weaving vehicles for a given configuration. note: A:1.4, B:3.5, C:3.0	3.5	3.5	3.5	3.5
N_{nw}, Number of lanes used by nonweaving vehicles. note: Nw < Nw(max) implies unconstrained, and Nw >= Nw(max) implies constrained	4	4	4	4
v, Total flow rate in the weaving segment (pc/h)	6640	7445	6644	7457
v_{o1}, Larger of the two outer, or nonweaving, flow rates in the weaving segment (pc/h)	5374	6062	5374	6062
v_{o2}, Smaller of the two outer, or nonweaving, flow rates in the weaving segment (pc/h)	0	0	0	0
v_{w1}, Larger of two weaving flow rates in the weaving segment (pc/h)	874	1147	874	1159
v_{w2}, Smaller of two weaving flow rates in the weaving segment (pc/h)	392	236	396	236
v_w, Total weaving flow rate in the weaving segment (pc/h) ($v_w = v_{w1} + v_{w2}$)	1266	1383	1270	1395
v_{nw}, Total nonweaving flow rate in the weaving segment (pc/h) ($v_{nw} = v_{o1} + v_{o2}$)	5374	6062	5374	6062
VR, Volume ratio; the ratio of weaving flow rate to total flow rate in the weaving segment ($VR = v_w/v$)	0.19	0.19	0.19	0.19
R, Weaving ratio; the ratio of the smaller weaving flow rate to total weaving flow rate (R = vw2/vw)	0.31	0.17	0.31	0.17
S_w, Speed of weaving vehicles in the weaving segment (mi/h)	50.03	48.95	50.03	48.95
S_{nw}, Speed of nonweaving vehicles in the weaving segment (mi/h)	59.35	58.31	59.35	58.31
S, Speed of all vehicles in the weaving segment (mi/h) [Eq 24-5, HCM2000]	57.31	56.31	57.31	56.3
D, Density of all vehicles in the weaving segment (pc/mi/ln) [Eq 24-6, HCM2000]	23.17	26.44	23.19	26.49
W_w, Weaving intensity factor for prediction of weaving speed	0.57	0.62	0.57	0.62
W_{nw}, Weaving intensity factor for prediction of nonweaving speed	0.24	0.27	0.24	0.27
S_{min}, Minimum speed expected in a weaving segment (mi/h)	15	15	15	15
S_{max}, Maximum speed expected in a weaving segment (mi/h)	70	70	70	70
a (weaving) [Exhibit 24-6, Unconstrainted]	0.08	0.08	0.08	0.08
b (weaving)	2.2	2.2	2.2	2.2
c (weaving)	0.7	0.7	0.7	0.7
d (weaving)	0.5	0.5	0.5	0.5
a (non-weaving)	0.002	0.002	0.002	0.002
b (non-weaving)	6	6	6	6
c (non-weaving)	1	1	1	1
d (non-weaving)	0.5	0.5	0.5	0.5
LOS	**C**	**C**	**C**	**C**

Queue Summary for Existing Conditions (95th Percentile)																Sacramento Intermodal Transit Facility Traffic Study
Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**NEL**	**NET**	**NER**
1 7th St & F St	Storage Length (ft)		75		100	320			330			2500				
	AM Queue (ft)		0		11	9			2			9				
	PM Queue (ft)		13		14	17			0			3				
2 7th St & G St	Storage Length (ft)				310		310					320				
	AM Queue (ft)				0		22					129				
	PM Queue (ft)				0		28					141				
3 5th St & H St	Storage Length (ft)		200						330							
	AM Queue (ft)		4						1							
	PM Queue (ft)		2						1							
4 6th St & H St	Storage Length (ft)		330						330	330		120				
	AM Queue (ft)		5						73	70		16				
	PM Queue (ft)		**m6**						**m16**	**m13**		16				
5 7th St & H St	Storage Length (ft)		250								340	340				
	AM Queue (ft)		62								53	101				
	PM Queue (ft)		47								49	137				
6 Jibboom St & I St	Storage Length (ft)	75	1000			1000					1000					
	AM Queue (ft)	**162**	75			66	6				96					
	PM Queue (ft)	**345**	75			145	12				106					
7 4th St & I St	Storage Length (ft)															
	AM Queue (ft)	Intersection does not exist														
	PM Queue (ft)															
8 5th St & I St	Storage Length (ft)					320			310				100			
	AM Queue (ft)					99		**m12**	98				100			
	PM Queue (ft)					**m96**		122	104				35			
9 6th St & I St	Storage Length (ft)					310			330			330				
	AM Queue (ft)					146		**m25**	**m61**			30	20			
	PM Queue (ft)					**#488**		255	**m49**			52	52			
10 7th St & I St	Storage Length (ft)				100	310						330	100			
	AM Queue (ft)				37	79						23	0			
	PM Queue (ft)				79	**403**						107	85			
11 3rd St & J St	Storage Length (ft)		1300							730	230	230		720		720
	AM Queue (ft)		**#537**							38	58	**#145**		**#623**		**#576**
	PM Queue (ft)		180							51	72	**#307**		**#223**		162
12 5th St & J St	Storage Length (ft)	140	300	150					740	740						
	AM Queue (ft)	**m46**	**m256**	**m3**					167	183						
	PM Queue (ft)	41	144						82	92						
13 6th St & J St	Storage Length (ft)	290	290						160		310					
	AM Queue (ft)	148	**529**						19		**m34**					
	PM Queue (ft)	**m11**	55						134		**m33**					

Queue Summary for Existing Conditions (95th Percentile)																Sacramento Intermodal Transit Facility Traffic Study
Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**NEL**	**NET**	**NER**
14 7th St & J St	Storage Length (ft)		320	100								330				
	AM Queue (ft)		**#835**	**m24**								89				
	PM Queue (ft)		29									76				

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queue Summary for Baseline Conditions (95th Percentile) Sacramento Intermodal Transit Facility Traffic Study

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER
1 7th St & F St	Storage Length (ft)		75		100	320			330			2500				
	AM Queue (ft)		0		11	9			2			9				
	PM Queue (ft)		13		14	17			0			3				
2 7th St & G St	Storage Length (ft)				310		310					320				
	AM Queue (ft)				0		22					129				
	PM Queue (ft)				0		28					151				
3 5th St & H St	Storage Length (ft)		200						330							
	AM Queue (ft)		4						1							
	PM Queue (ft)		2						1							
4 6th St & H St	Storage Length (ft)		330						330	330		120				
	AM Queue (ft)		5						73	70		16				
	PM Queue (ft)		**m6**						**m16**	**m12**		16				
5 7th St & H St	Storage Length (ft)		250								340	340				
	AM Queue (ft)		62								53	101				
	PM Queue (ft)		47								**m48**	143				
6 Jibboom St & I St	Storage Length (ft)	75	1000			1000					1000					
	AM Queue (ft)	**162**	75			66	6				96					
	PM Queue (ft)	**345**	75			145	12				106					
7 4th St & I St	Storage Length (ft)															
	AM Queue (ft)	Intersection does not exist														
	PM Queue (ft)															
8 5th St & I St	Storage Length (ft)					320			310				100			
	AM Queue (ft)					100		**m12**	99				100			
	PM Queue (ft)					**m96**		122	105				35			
9 6th St & I St	Storage Length (ft)					310			330			330				
	AM Queue (ft)					148		**m25**	**m60**			30	20			
	PM Queue (ft)					**#500**		254	**m49**			52	52			
10 7th St & I St	Storage Length (ft)				100	310						330	100			
	AM Queue (ft)				37	81						23	0			
	PM Queue (ft)				80	**414**						117	85			
11 3rd St & J St	Storage Length (ft)		1300							730	230	230		720		720
	AM Queue (ft)		**#540**							38	58	**#145**		**#623**		**#576**
	PM Queue (ft)		184							51	72	**#307**		**#223**		162
12 5th St & J St	Storage Length (ft)	140	300	150					740	740						
	AM Queue (ft)	**m46**	**m254**	**m3**					167	183						
	PM Queue (ft)	41	150						83	93						
13 6th St & J St	Storage Length (ft)	290	290						160		310					
	AM Queue (ft)	150	**536**						19		**m33**					
	PM Queue (ft)	**m10**	55						134		**m33**					

Queue Summary for Baseline Conditions (95th Percentile)																Sacramento Intermodal Transit Facility Traffic Study
Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**NEL**	**NET**	**NER**
14 7th St & J St	Storage Length (ft)		320	100								330				
	AM Queue (ft)		**#848**	**m24**								89				
	PM Queue (ft)		**#37**									81				

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queue Summary for Phase 2 Project Conditions (95th Percentile) Sacramento Intermodal Transit Facility Traffic Study

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	NEL	NET	NER
1 7th St & F St	Storage Length (ft)		75		100	320			330			2500					
	AM Queue (ft)		1		13	11			2			9					
	PM Queue (ft)		15		14	18			0			3					
2 7th St & G St	Storage Length (ft)				310		310					320					
	AM Queue (ft)				0		22					136					
	PM Queue (ft)				0		29					154					
3 5th St & H St	Storage Length (ft)		200						330								
	AM Queue (ft)		20						11								
	PM Queue (ft)		22						3								
4 6th St & H St	Storage Length (ft)		330						330	330		120					
	AM Queue (ft)		13						73	70		16					
	PM Queue (ft)		**m15**						**m16**	**m12**		16					
5 7th St & H St	Storage Length (ft)		250								340	340					
	AM Queue (ft)		62								53	106					
	PM Queue (ft)		49								**m47**	145					
6 Jibboom St & I St	Storage Length (ft)	75	1000			1000					1000						
	AM Queue (ft)	**162**	75			66	6				96						
	PM Queue (ft)	**346**	75			146	12				107						
7 4th St & I St	Storage Length (ft)					340	340	75					75	75			
	AM Queue (ft)					103	68	13					9	10			
	PM Queue (ft)					77	86	23					40	34			
8 5th St & I St	Storage Length (ft)					320			310				100				
	AM Queue (ft)					97		**m12**	103				100				
	PM Queue (ft)					**m97**		123	107				26				
9 6th St & I St	Storage Length (ft)					310			330			330					
	AM Queue (ft)					152		**m25**	**m61**			30	20				
	PM Queue (ft)					**#500**		254	**m49**			55	55				
10 7th St & I St	Storage Length (ft)				100	310						330	100				
	AM Queue (ft)				37	82						24	0				
	PM Queue (ft)				80	**413**						119	85				
11 3rd St & J St	Storage Length (ft)		1300							730	230	230			720		720
	AM Queue (ft)		**#545**							38	58	**#160**			**#607**		**#594**
	PM Queue (ft)		184							51	72	**#342**			**#223**		165
12 5th St & J St	Storage Length (ft)	140	300	150					740	740							
	AM Queue (ft)	**m46**	**m252**	**m2**					168	185							
	PM Queue (ft)	43	150						84	93							
13 6th St & J St	Storage Length (ft)	290	290						160		310						
	AM Queue (ft)	144	**546**						19		**m33**						
	PM Queue (ft)	**m10**	48						132		**m33**						

Queue Summary for Phase 2 Project Conditions (95th Percentile)																	Sacramento Intermodal Transit Facility Traffic Study
Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**SBR2**	**NEL**	**NET**	**NER**
14 7th St & J St	Storage Length (ft)		320	100								330					
	AM Queue (ft)		**#847**	**m24**								90					
	PM Queue (ft)		**#160**									81					

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.