WESTSIDE SUBWAY EXTENSION PROJECT

Wilshire/Rodeo Station Bank of America Portal Traffic Impact Analysis Report

Metro

August 2011

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1.0 INTRODUCTION

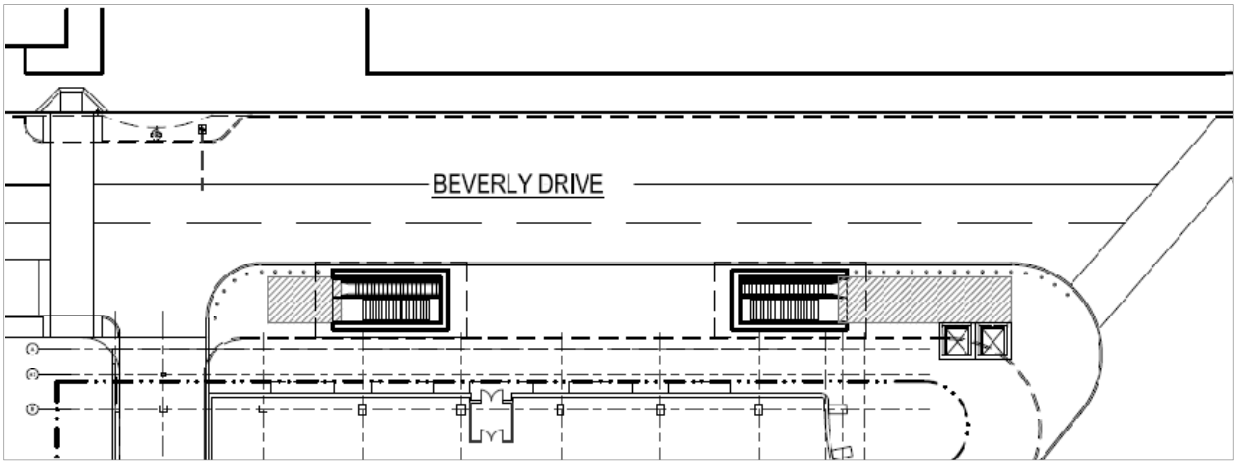
This report provides updated information from what was presented in the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR). The focus of this report is on the identification and analysis of potential effects of the Locally Preferred Alternative (LPA) Bank of America portal option for the Wilshire/Rodeo Station on the existing and future transportation network in the immediate vicinity of the station. The analysis results have changed from the Draft EIS/EIR in that one location would be adversely affected by the LPA in terms of identified criteria with the Bank of America portal option. Information in this report is included in the *Westside Subway Extension Transportation Impacts Technical Report* (August 2010), including *Addenda* (July 2010).

The Bank of America portal option would result in reduced vehicular capacity at the south approach of Wilshire Boulevard and Beverly Drive. The location of this portal (northwest corner of Wilshire Boulevard and Beverly Drive) would require the following modifications to Beverly Drive between Dayton Way and Wilshire Boulevard:

- Widening the sidewalk on the western side by 15 feet
- Removal of the southbound right-turn lane
- Removal of three metered parking spaces and one loading zone space on the western (southbound travel direction) side
- Removal of up to 13 metered parking spaces on the eastern (northbound travel direction) side
- Removal of the mid-block curb extension on the eastern side
- Removal of the mid-block northbound and southbound left-turn pockets

Southbound Beverly Drive at Wilshire Boulevard would be reduced from two through lanes and one right-turn lane to one through lane and one through-right lane (Figure 1-1).

Figure 1-1. Beverly Drive Lane Configuration with Bank of America Portal Option



1.1 Study Scope

A subset of the LPA's 126 study intersections were selected in recognition that the effect of the traffic shift due to the removal of the southbound right-turn lane at the Wilshire Boulevard and Beverly Drive intersection would be local, not regional. Therefore, 16 intersections, comprising those within the Wilshire/Rodeo Station area (and analyzed in the Draft EIS/EIR), were selected and analyzed to determine the potential traffic impacts of the LPA under existing and future (year 2035) conditions, assuming the Bank of America portal option was selected. The intersections selected for analysis are all located within the City of Beverly Hills.

2.0 EXISTING NO BUILD AND FUTURE YEAR 2035 NO BUILD CONDITIONS

This report has been updated from the Draft EIS/EIR to focus on the analysis of the effects of the LPA on existing and future traffic conditions. The analysis results for Existing No Build and Future No Build traffic conditions have not changed from the Draft EIS/EIR and can be found in the *Westside Subway Extension Transportation Impacts Technical Report* (August 2010), including *Addenda* (July 2010). The traffic volumes for the analyzed peak hours under the Existing No Build and Future No Build traffic conditions are provided in Appendix A of the *Traffic Analysis Impact Report*.

2.1 Level-of-Service Methodology

The commonly accepted operational analysis methodology from the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2000) was used to estimate delay and corresponding level-of-service (LOS) at each study intersection. The operations analysis methodology rates intersection conditions based on the average delay, measured in seconds, experienced by drivers.

LOS is a qualitative measure used to describe the condition of traffic flow, ranging from LOS A (free-flow conditions) to LOS F (congested conditions), with LOS E representing the theoretical maximum capacity of a link or intersection before gridlock occurs. Table 2-1 provides LOS definitions for signalized intersections using the HCM methodology. Weekday AM and PM peak hours were selected for analysis because they represent the most critical periods of traffic congestion in the study area compared to other periods such as weekday or weekend midday. The LOS definitions and ranges of delay shown in Table 2-1 represent average conditions for all vehicles at an intersection across an entire hour. Delays longer than the average condition are experienced by motorists on certain movements and/or during peak times within the peak hour.

Generally, the minimum acceptable LOS for any intersection in an urbanized area is LOS D. The affected jurisdictions for the study area of the Westside Subway Extension Project Corridor all consider LOS D the minimum acceptable LOS. Therefore, LOS D will serve as the minimum acceptable standard for this Project.

Table 2-1: Level-of-Service Definitions for Signalized Intersections

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

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.
* Level-of-service interpretation was derived from *Highway Capacity Manual 1994*, Transportation Research Board, 1994.

2.2 Level-of-Service Analysis Tool

The Synchro 6.0 software suite was used to develop study area roadway and intersection network for traffic analysis in the Draft EIS/EIR. The Synchro model was constructed by drawing the roadway network using aerial photography as a background. The number of lanes and the location of lane additions and drops were confirmed by field observations. Additional detail was incorporated into the Synchro network (posted speed limits, grades, etc.) to better reflect observed field conditions. Traffic signal-related information such as phasing and initial timings (minimum green, maximum green, distance or "gap" between vehicles, etc.) for the signalized intersections was obtained from the affected agencies or during field visits to the site. Additional detail such as turn pocket lengths, saturation flow, and intersection spacing was coded based on field measurements. Once the model was developed, AM and PM peak-hour intersection turning-movement counts and pedestrian volumes were added to the 192 study locations representing the study area analyzed in the Draft EIS/EIR.

2.3 Level-of-Service Analysis

For the LPA Bank of America portal option LOS and impact analysis, 16 of the 192 study locations were selected for analysis. The delay and delay-based LOS at the 16 study locations represent existing and future traffic conditions for the Wilshire/Rodeo Station area.

The LOS results of the analysis of existing and future No Build weekday morning and afternoon peak-hour conditions at the 16 intersections included in the Bank of America portal option analysis are summarized in Appendix A.

3.0 EXISTING PLUS PROJECT CONDITIONS AND IMPACT ANALYSIS

This section describes the methodology used to forecast Existing plus Project traffic volumes and details and expected intersection level-of-service that would result from the addition of the LPA with the Bank of America portal option to the existing street system.

3.1 Travel Demand Forecasting Methodology

A travel demand model for the Project was developed using a combination of the updated Metro Regional Travel Demand Model and the VISUM modeling software. The Metro Regional Travel Demand Model was used to forecast regional travel patterns, and the VISUM modeling software was used to refine regional travel patterns to match observed traffic counts.

The Metro Regional Travel Demand Model receives its demographic inputs from the Southern California Association of Governments Regional Travel Demand Model and produces regional travel flows based on a four-step process. To improve on the level of detail in the forecasting process, the VISUM modeling software was used to extract a sub-area of the regional model and enhance its level of detail. VISUM has the same standard features as traditional travel demand models as well as other features that allow the model to capture the local-scale distributional effects of roadway improvements and land use changes more accurately. VISUM is capable of refining regional travel patterns to match observed traffic volumes through a matrix estimation process and uses an assignment algorithm that assigns vehicle trips to the roadway network based on roadway link and turning movement capacities. Thus, the regional model was used as a macro-level planning tool for trip generation, trip distribution, and mode split, while the VISUM model was used for travel pattern refinement and detailed trip assignment in the study area.

A sub-area validation was performed on the base year VISUM model to ensure the model produced traffic forecasts that reasonably resembled observed traffic counts obtained in the project study area. The model was calibrated by adjusting parameters such as roadway speeds and capacities until the model was validated by applying a set of criteria that compare model volumes to actual counts. The base year VISUM model was then considered to be valid to existing traffic counts.

Existing plus Project traffic volume forecasts were developed with the use of the Base Year (2010) Metro Regional Travel Demand Model. The Base Year Metro Regional Travel Demand Model was run without (No Build) and with (plus Project) the LPA to produce two sets of origin-destination trip tables. The difference between the two origin-destination trip tables (plus Project minus No Build) was then added to the validated base year trip table and assigned to the VISUM roadway network, which included the capacity reduction on southbound Beverly Drive at Wilshire Boulevard from two through lanes and one right-turn lane to one through lane and one through-right lane. The resulting outputs were Existing plus Project turning movement forecasts.

In addition, the LPA will result in additional pedestrian activity at intersections immediately adjacent to and within walking distance (typically one-quarter mile) of station locations. Mode of access data from the Metro Regional Travel Demand Model along with future station site plans were used to determine the increase in pedestrians expected at each leg of an intersection adjacent to a station location. The pedestrian volumes were added to the Synchro network to account for additional vehicle delay at unprotected left and right turns as a result of increased pedestrian activity. Vehicle delay will also be affected by an increased number of pedestrian calls, which would increase time allotted to walk phases and associated green phases.

3.2 Traffic Forecasts

Using the inputs described previously, the weekday peak hour (AM and PM) Existing plus Project forecasts for the LPA with the Bank of America portal option were developed at the 16 subset study intersections. Study intersection turning movement volumes are contained in Appendix B.

Compared to the traffic forecasts developed for the LPA without the Bank of America portal option, this analysis found that the removal of the southbound right-turn lane at the Wilshire Boulevard and Beverly Drive intersection would be expected to result in localized traffic redistribution, although the magnitude would vary by peak hour.

The VISUM model indicated that the potential traffic redistribution for the AM peak hour under the Existing plus Project scenario would be minimal. However, during the PM peak hour the VISUM model indicated that removal of the right-turn lane would result in a moderate traffic shift away from the Wilshire Boulevard and Beverly Drive intersection.

3.3 Level-of-Service Analysis

Projected morning and afternoon peak-period delay and corresponding LOS for the selected 16 study intersections are contained in Appendix A. Detailed LOS calculations per intersection by peak hour scenario are provided in Appendix C.

Under Existing plus Project conditions, 11 of the 16 analyzed intersections would operate at an acceptable LOS D or better in the morning peak hour. The remaining five intersections would operate at LOS E or F (deficient LOS) during the AM peak hour. Eight of the 16 analyzed intersections would operate at an acceptable LOS D or better in the PM peak hour. The remaining eight intersections would operate at LOS E or F (deficient LOS) during the PM peak hour. The LOS results by peak hour for the Existing plus Project condition are illustrated graphically in Figure 3-1.

The LPA will result in a modest, but measurable, improvement in traffic operating conditions in the Wilshire/Rodeo Station area compared to existing conditions. In the AM peak hour, one of the 16 intersections will improve by one level-of-service, and in the PM peak hour two intersections would improve by one level-of-service.

Table 3-1 summarizes the improvement in level-of-service generated by the LPA for each peak hour.

Figure 3-1: Existing Plus Project Level-of-Service

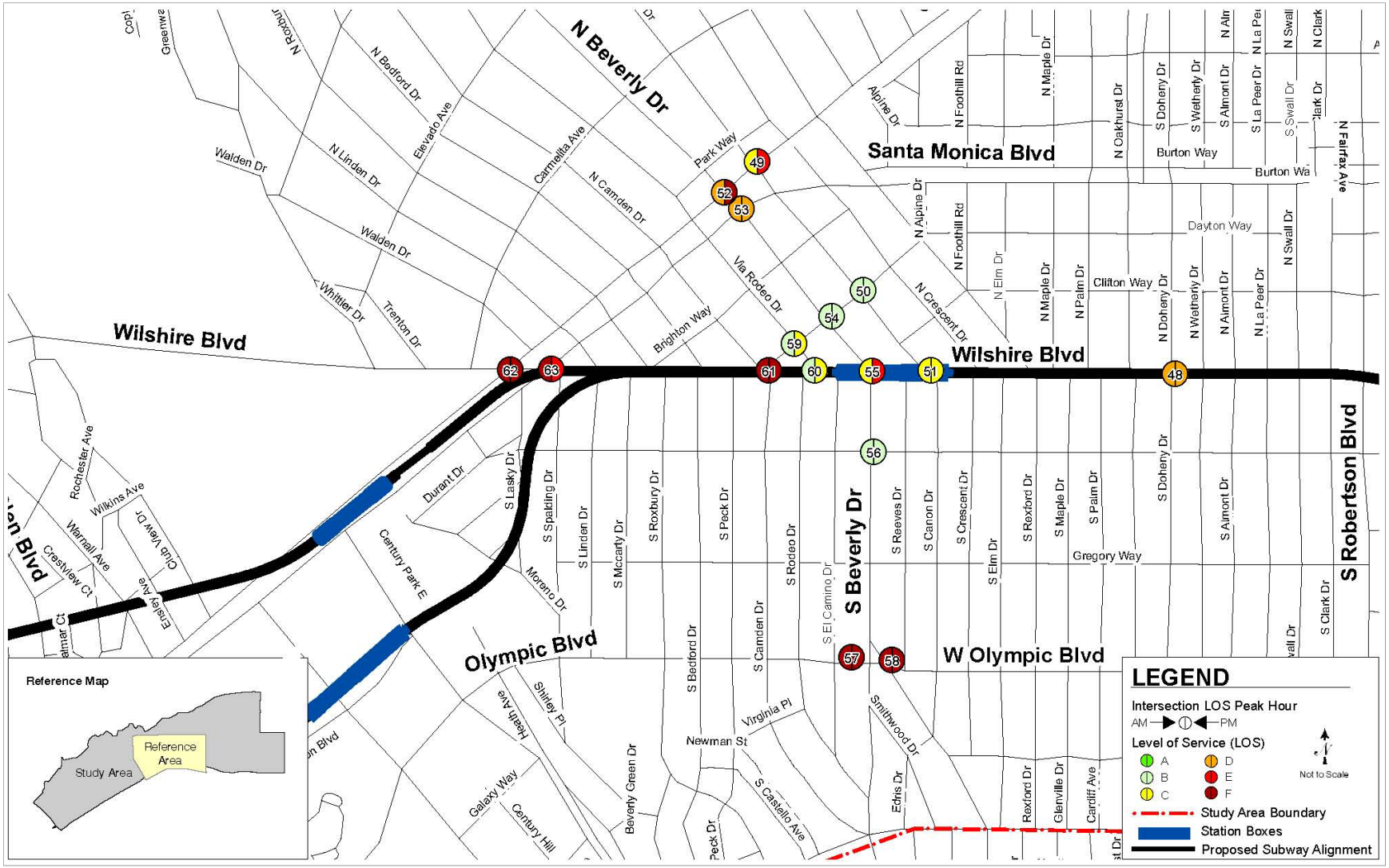


Table 3-1: LPA Level-of-Service Improvement Compared to Existing Conditions

Level-of-Service Improvement	Number of Intersections with LOS Improvement	
	AM Peak Hour	PM Peak Hour
F to E or better	0	1
E to D or better	1	0
D to C or better	0	0
C to B or better	0	1
B to A or better	0	0
No change in LOS	15	14
Total	16	16

3.4 Existing Plus Project Impact Analysis

The projected Existing plus Project levels-of-service were analyzed to determine the operating conditions of the 16 study intersections with the LPA including the Bank of America portal option in place. These levels-of-service were compared to the existing intersection levels-of-service to identify potential impacts of the LPA on the surrounding street system. This section provides a discussion of the impact criteria used to assess the potential for significant/adverse impacts, provides an impact analysis, and summarizes the results.

3.4.1 Methodology and Impact Criteria

For the traffic impact analysis, the evaluation of significance under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) is defined by comparing the Existing plus Project scenario to the Existing No Build scenario. The net change in delay at study intersections is compared to thresholds of significance for determination of impacts. The criteria used to measure a significant impact are defined in Table 3-2.

Table 3-2 : Westside Subway Extension Project Traffic Impact Criteria

Definition	Criteria
The intersection LOS analysis assumes that an intersection would be significantly impacted (CEQA)/adversely affected (NEPA) by traffic volume changes if a project alternative causes an increase in average vehicle delay according to the following thresholds:	Final LOS C—A significant/adverse impact has occurred if the delay is increased by 10 or more seconds
	Final LOS D—A significant/adverse impact has occurred if the delay is increased by 7.5 or more seconds
	Final LOS E/F—A significant/adverse impact has occurred if the delay is increased by 5 or more seconds

3.4.2 Impact Determination

Using the impact criteria shown in Table 3-2, the traffic impact analysis found that with the LPA, including the Bank of America portal option, no study intersection exceeded the threshold for a significant/adverse traffic impact as compared to the Existing No Build scenario. Therefore, the LPA will not result in significant/adverse traffic impacts under existing conditions.

Projected morning and afternoon peak-period delay, corresponding LOS, and impact determination for the LPA at the 16 subset study intersections are contained in Appendix A.

4.0 FUTURE (YEAR 2035) PLUS PROJECT CONDITIONS AND IMPACT ANALYSIS

This section describes the methodology used to forecast Future plus Project traffic volumes and details expected intersection level-of-service resulting from the addition of the LPA with the Bank of America portal option to the future (year 2035) street system.

4.1 Traffic Forecasts

Future plus Project traffic volume forecasts were developed with the use of the Future Year (2035) Metro Regional Travel Demand Model. The Travel Demand Model was run without (No Build) and with (plus Project) the LPA to produce two sets of origin-destination trip tables. The difference between the two origin-destination trip tables (plus Project minus No Build) was then added to the validated base year trip table and assigned to the VISUM roadway network, which included the capacity reduction on southbound Beverly Drive at Wilshire Boulevard from two through lanes and one right-turn lane to one through lane and one through-right lane. The resulting outputs were Future plus Project turning movement forecasts.

The weekday peak hour (AM and PM) Future plus Project forecasts for the LPA with the Bank of America portal option were developed at the 16 subset study intersections. Study intersection turning movement volumes are contained in Appendix B.

As with the Existing plus Project analysis, the removal of the southbound right-turn lane at the Wilshire Boulevard and Beverly Drive intersection would be expected to result in localized traffic redistribution in the Future plus Project scenario, although the magnitude would vary by peak hour.

The VISUM model indicated that the potential traffic redistribution for the AM peak hour under the Existing plus Project scenario would be minimal. However, during the PM peak hour, the VISUM model indicated that removal of the right-turn lane would result in a moderate traffic shift away from the Wilshire Boulevard and Beverly Drive intersection.

4.2 Level-of-service Analysis

Projected morning and afternoon peak-period delay and corresponding LOS for the selected 16 study intersections are contained in Appendix A. Detailed LOS calculations per intersection by scenario are provided in Appendix C.

Under Future (Year 2035) plus Project conditions, 5 of the 16 analyzed intersections would operate at an acceptable LOS D or better in the morning peak hour. The remaining 11 intersections would operate at LOS E or F (deficient LOS) during the AM peak hour. Six of the 16 analyzed intersections would operate at an acceptable LOS D or better in the PM peak hour. The remaining 10 intersections would operate at LOS E or F (deficient LOS) during the PM peak hour. The LOS results for Future (Year 2035) plus Project conditions by peak hour are illustrated graphically in Figure 4-1.

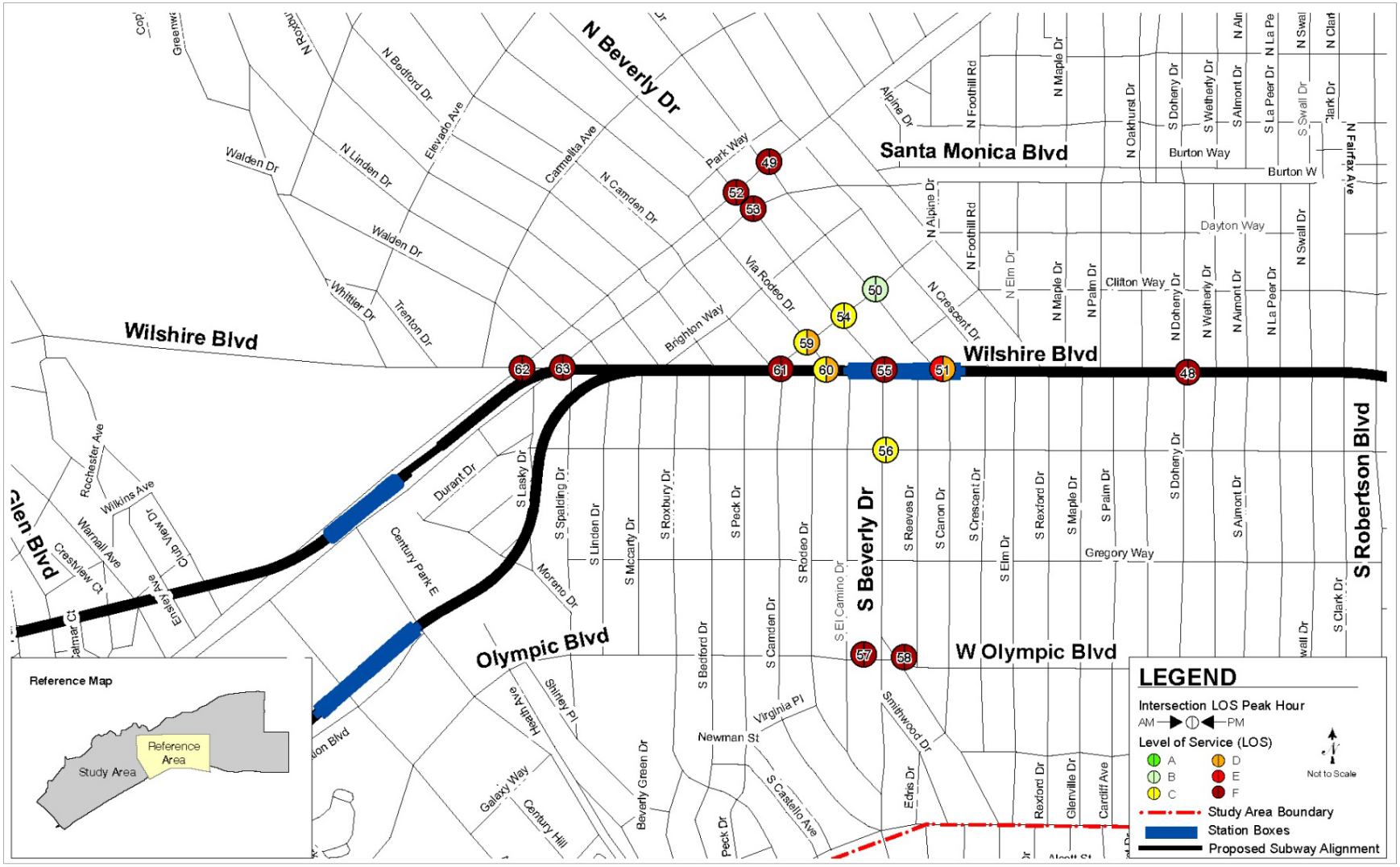
The LPA will result in a modest, but measurable, improvement in traffic operating conditions in the Wilshire/Rodeo Station area compared to future No Build conditions, with the exception of the Wilshire Boulevard and Beverly Drive intersection. In the AM and PM peak hour, 1 of the 16

intersections would improve by one level-of-service. Table 4-1 summarizes the improvement in level-of-service generated by the LPA for each peak hour.

Table 4-1: LPA Level-of-Service Improvement Compared to Future No Build Conditions

Level-of-Service Improvement	Number of Intersections with LOS Improvement	
	AM Peak Hour	PM Peak Hour
F to E or better	0	0
E to D or better	0	1
D to C or better	1	0
C to B or better	0	0
B to A or better	0	0
No change in LOS	15	15
Total	16	16

Figure 4-1. Future Plus Project Level-of-Service



4.3 Future Plus Project Impact Analysis

The projected Future 2035 plus Project levels-of-service were analyzed to determine the operating conditions of the 16 study intersections with the LPA including the Bank of America portal option in place. These levels-of-service were compared to the Future No Build intersection levels-of-service to identify the potential impacts of the LPA on the surrounding street system.

4.3.1 Impact Determination

The impact criteria shown in Table 3-2 was used to assess the potential for significant/adverse impacts. The traffic impact analysis found that with the LPA including the Bank of America portal option the intersection of Wilshire Boulevard and Beverly Drive exceeded the impact threshold during the AM peak hour and PM peak hour.

The LPA with the Bank of America portal option would result in a significant traffic impact on the future (year 2035) transportation network during the AM and PM peak hours as compared to the Future No Build scenario.

Projected morning and afternoon peak-period delay, corresponding LOS, and impact determination for the LPA at the 16 study intersections are contained in Appendix A.

4.3.2 Mitigation Measures

No feasible mitigation measure was identified for the impact at Wilshire Boulevard and Beverly Drive. The intersection is fully built-out indicating that physical mitigation would not be possible without taking public property or public right-of-way. The left-turn approaches on Wilshire Boulevard are currently phased as protected-permitted and no left turns are permitted from Beverly Drive indicating that signal phasing modifications would not mitigate the impact. At this location, only maintaining the existing southbound lane configuration would avoid the impact.

4.3.3 CEQA Determination

The impact at Wilshire Boulevard and Beverly Drive would be significant and unavoidable.

APPENDICES

Appendix A EXISTING AND FUTURE (YEAR 2035) INTERSECTION LEVEL-OF-SERVICE

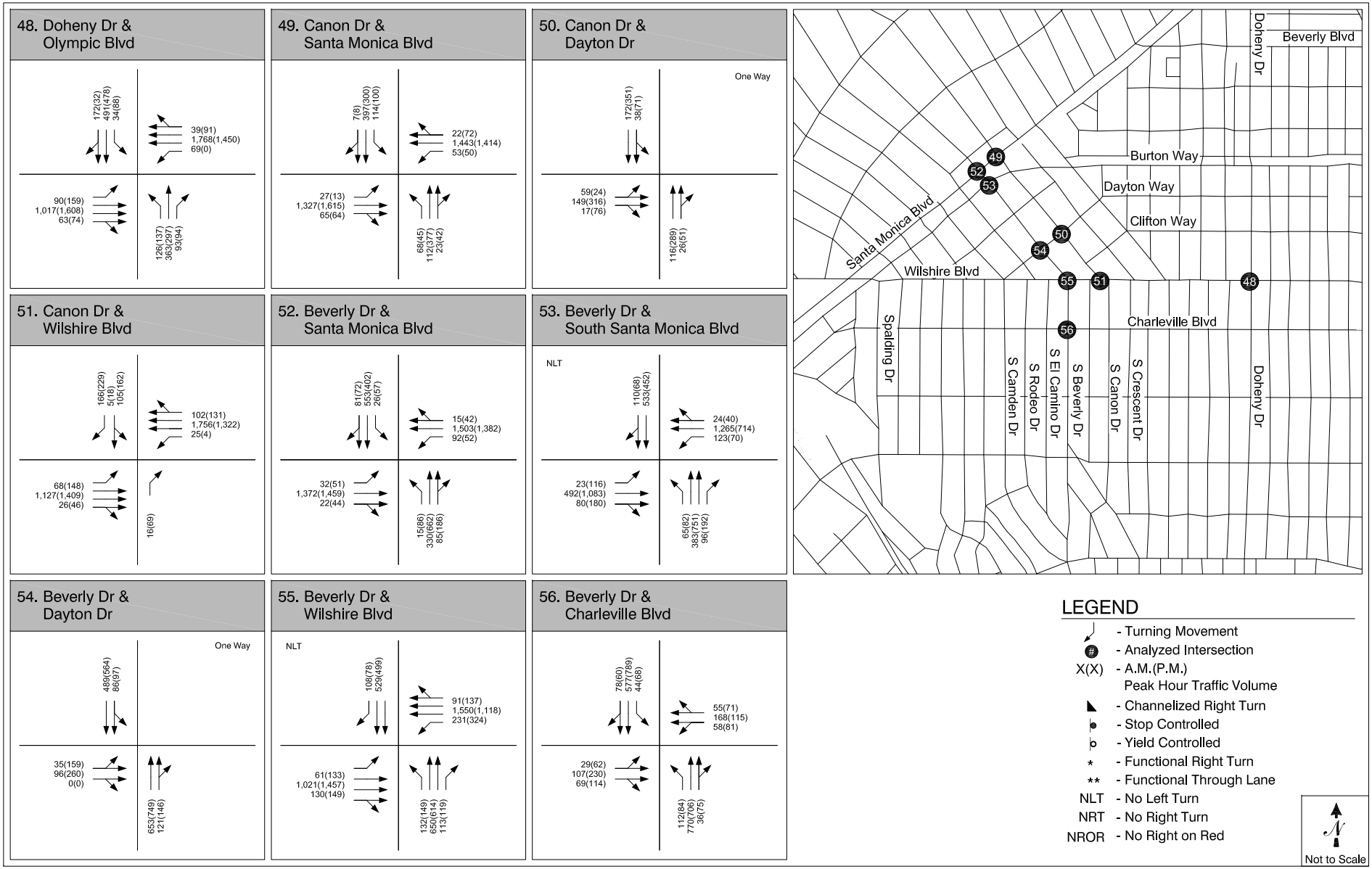
APPENDIX A-1
EXISTING PLUS PROJECT (LPA) IMPACT ANALYSIS

				Existing Level of Service				Existing plus Project Level of Service and Impact Determination							
				AM Peak Hour		PM Peak Hour		AM Peak Hour				PM Peak Hour			
Intersection	North/South Street	East/West Street	Jurisdiction	Delay (sec)	LOS per Delay	Delay (sec)	LOS per Delay	Delay (sec)	LOS per Delay	Change in Delay	Impact	Delay (sec)	LOS per Delay	Change in Delay	Impact
48	Doheny Dr	Wilshire Blvd	BH	45.2	D	39.6	D	40.7	D	-4.5	NO	40.7	D	1.1	NO
49	Canon Dr	Santa Monica Blvd	BH	29.6	C	58.7	E	27.1	C	-2.5	NO	57.2	E	-1.5	NO
50	Canon Dr	Dayton Dr	BH	12.8	B	14.8	B	13.3	B	0.5	NO	16.4	B	1.6	NO
51	Canon Dr	Wilshire Blvd	BH	23.4	C	25.1	C	22.3	C	-1.1	NO	29.0	C	3.9	NO
52	Beverly Dr	Santa Monica Blvd	BH	56.8	E	87.3	F	53.9	D	-2.9	NO	85.1	F	-2.2	NO
53	Beverly Dr	South Santa Monica Blvd	BH	51.4	D	54.2	D	44.9	D	-6.5	NO	44.5	D	-9.7	NO
54	Beverly Dr	Dayton Dr	BH	15.4	B	25.2	C	15.0	B	-0.4	NO	14.2	B	-11.0	NO
55	Beverly Dr	Wilshire Blvd	BH	33.0	C	56.0	E	34.3	C	1.3	NO	59.3	E	3.3	NO
56	Beverly Dr	Charleville Blvd	BH	16.7	B	19.3	B	16.7	B	0.0	NO	19.1	B	-0.2	NO
57	Beverwil Dr	Olympic Blvd	BH	102.4	F	101.6	F	100.5	F	-1.9	NO	82.9	F	-18.7	NO
58	Beverly Dr	Olympic Blvd	BH	124.4	F	107.4	F	112.8	F	-11.6	NO	86.9	F	-20.5	NO
59	Rodeo Dr	Dayton Dr	BH	18.6	B	20.5	C	18.6	B	0.0	NO	20.6	C	0.1	NO
60	Rodeo Dr	Wilshire Blvd	BH	17.4	B	23.1	C	17.3	B	-0.1	NO	22.0	C	-1.1	NO
61	Camden Dr/Dayton Dr	Wilshire Blvd	BH	106.1	F	99.6	F	108.1	F	2.0	NO	94.8	F	-4.8	NO
62	Santa Monica Blvd	Wilshire Blvd	BH	233.9	F	215.2	F	224.8	F	-9.1	NO	208.1	F	-7.1	NO
63	South Santa Monica Blvd	Wilshire Blvd	BH	140.9	F	97.0	F	119.4	F	-21.5	NO	79.5	E	-17.5	NO

APPENDIX A-2
FUTURE 2035 PLUS PROJECT (LPA) IMPACT ANALYSIS

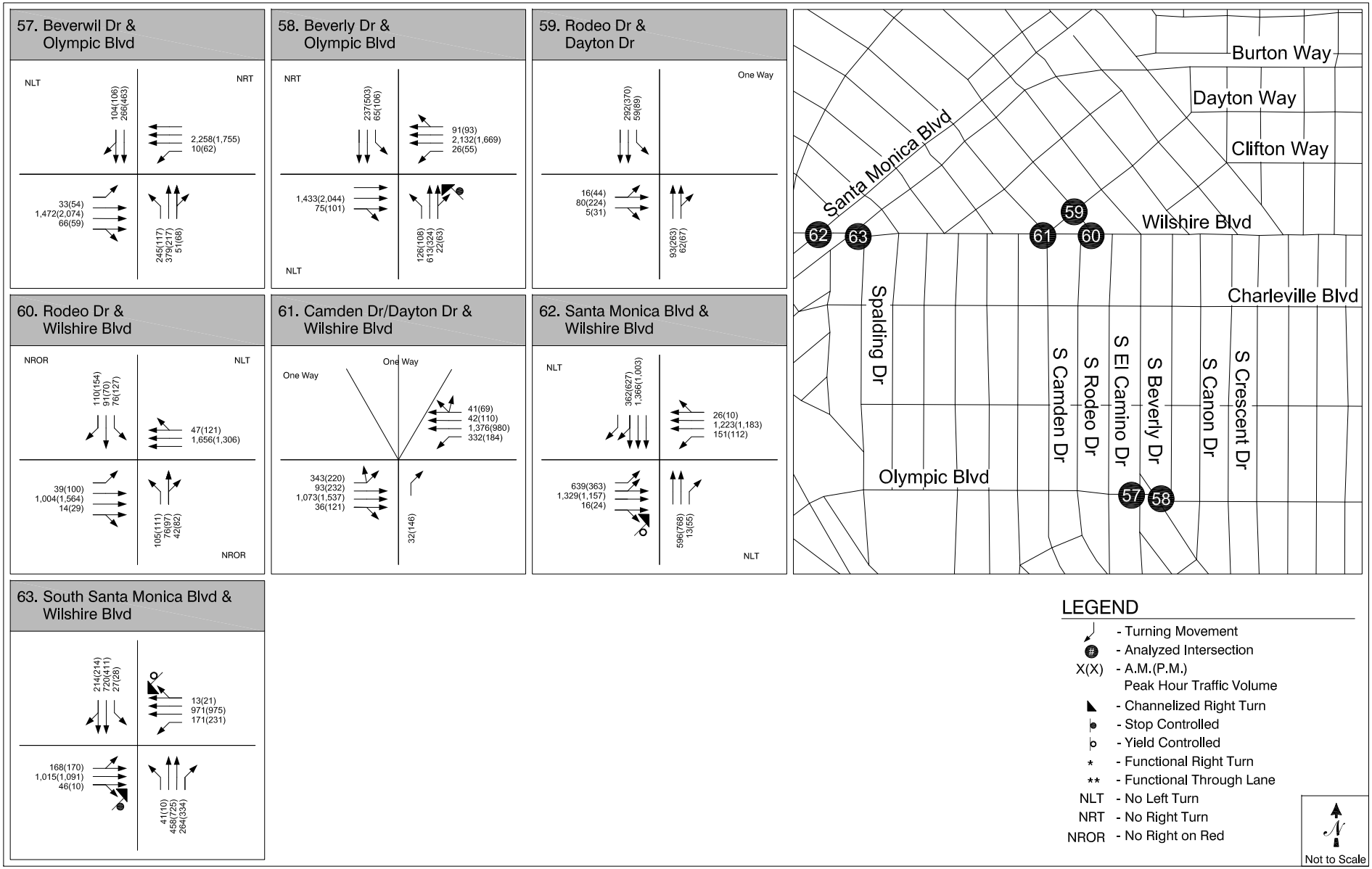
				No Build Level of Service				Future plus Project Level of Service and Impact Determination							
				AM Peak Hour		PM Peak Hour		AM Peak Hour				PM Peak Hour			
Intersection	North/South Street	East/West Street	Jurisdiction	Delay (sec)	LOS per Delay	Delay (sec)	LOS per Delay	Delay (sec)	LOS per Delay	Change in Delay	Impact	Delay (sec)	LOS per Delay	Change in Delay	Impact
48	Doheny Dr	Wilshire Blvd	BH	154.1	F	127.8	F	150.4	F	-3.7	NO	122.3	F	-5.5	NO
49	Canon Dr	Santa Monica Blvd	BH	136.8	F	214.1	F	131.6	F	-5.2	NO	209.7	F	-4.4	NO
50	Canon Dr	Dayton Dr	BH	13.7	B	15.6	B	13.9	B	0.2	NO	16.1	B	0.5	NO
51	Canon Dr	Wilshire Blvd	BH	72.8	E	45.2	D	62.7	E	-10.1	NO	35.4	D	-9.8	NO
52	Beverly Dr	Santa Monica Blvd	BH	257.1	F	247.4	F	219.5	F	-37.6	NO	251.4	F	4.0	NO
53	Beverly Dr	South Santa Monica Blvd	BH	194.5	F	141.9	F	180.7	F	-13.8	NO	144.8	F	2.9	NO
54	Beverly Dr	Dayton Dr	BH	29.8	C	28.7	C	25.8	C	-4.0	NO	25.2	C	-3.5	NO
55	Beverly Dr	Wilshire Blvd	BH	95.5	F	127.8	F	120.0	F	24.5	**YES**	180.2	F	52.4	**YES**
56	Beverly Dr	Charleville Blvd	BH	24.0	C	27.0	C	22.4	C	-1.6	NO	26.5	C	-0.5	NO
57	Beverwil Dr	Olympic Blvd	BH	297.5	F	296.6	F	273.4	F	-24.1	NO	292.9	F	-3.7	NO
58	Beverly Dr	Olympic Blvd	BH	294.2	F	300.3	F	279.9	F	-14.3	NO	296.9	F	-3.4	NO
59	Rodeo Dr	Dayton Dr	BH	20.7	C	58.3	E	20.3	C	-0.4	NO	48.6	D	-9.7	NO
60	Rodeo Dr	Wilshire Blvd	BH	43.5	D	44.4	D	34.9	C	-8.6	NO	42.5	D	-1.9	NO
61	Camden Dr/Dayton Dr	Wilshire Blvd	BH	204.0	F	297.2	F	193.4	F	-10.6	NO	274.6	F	-22.6	NO
62	Santa Monica Blvd	Wilshire Blvd	BH	499.0	F	512.7	F	481.3	F	-17.7	NO	510.6	F	-2.1	NO
63	South Santa Monica Blvd	Wilshire Blvd	BH	347.2	F	325.6	F	334.3	F	-12.9	NO	330.1	F	4.5	NO

Appendix B EXISTING PLUS PROJECT AND FUTURE (YEAR 2035) PLUS PROJECT VOLUMES



Existing Plus Project Peak Hour Traffic Volumes

Appendix B



Existing Plus Project Peak Hour Traffic Volumes

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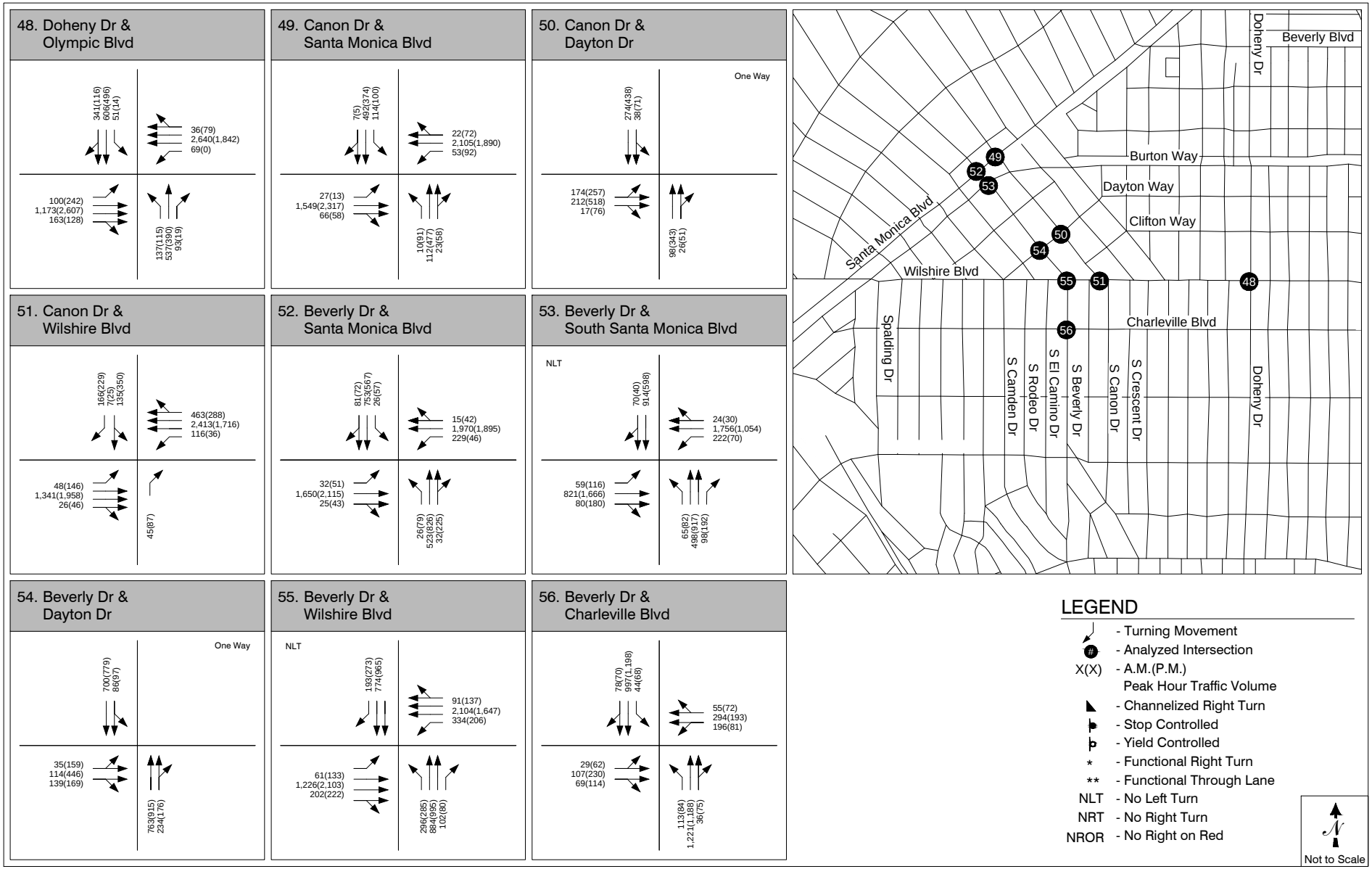
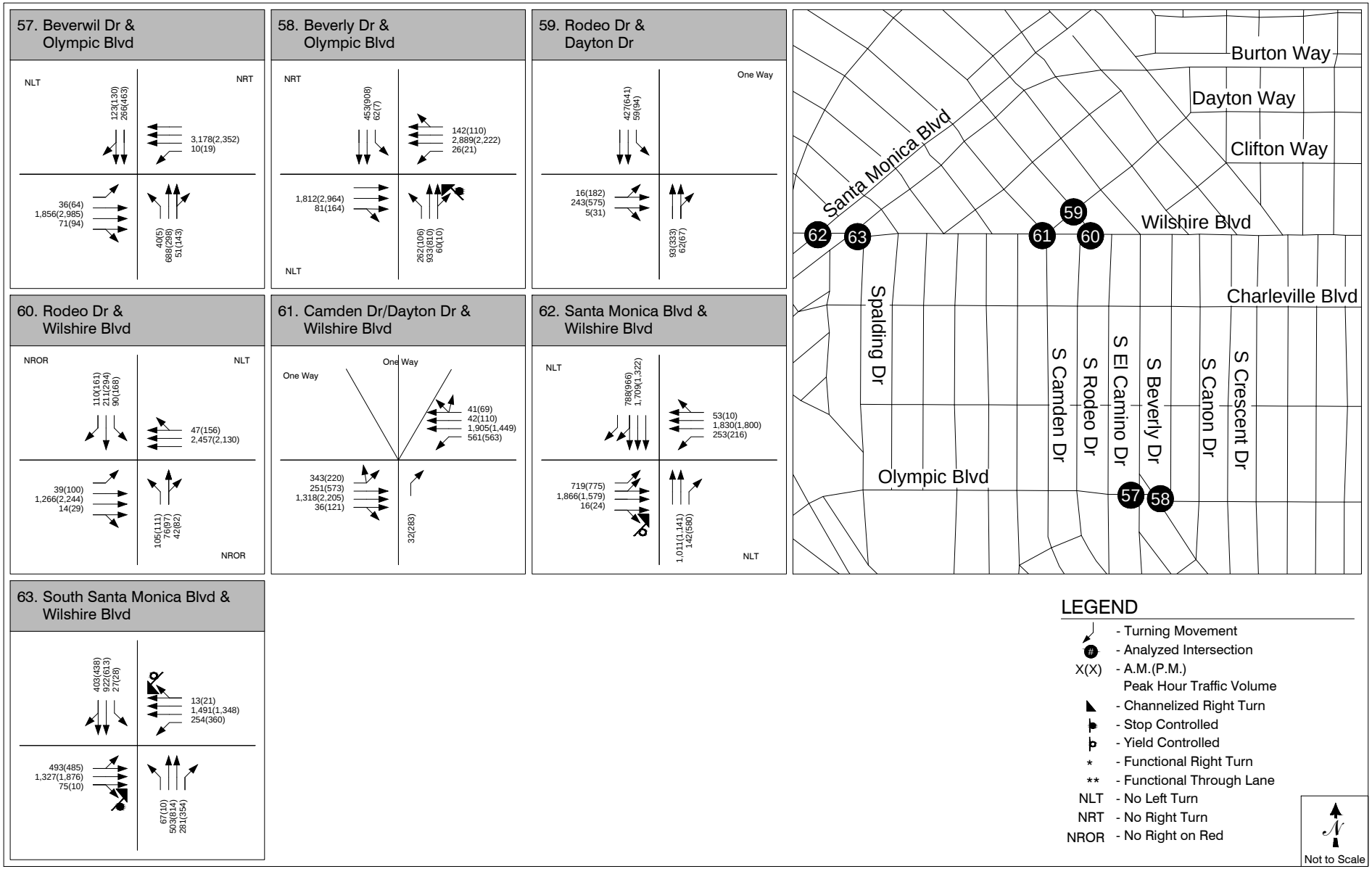


Future (Year 2035) Plus Project Peak Hour Traffic Volumes

Appendix B



Future (Year 2035) Plus Project Peak Hour Traffic Volumes

Appendix B

Appendix C LEVEL-OF-SERVICE WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1583	4510		1583	4535		1583	1667	1417	1583	3043	
Flt Permitted	0.09	1.00		0.16	1.00		0.20	1.00	1.00	0.35	1.00	
Satd. Flow (perm)	157	4510		273	4535		330	1667	1417	585	3043	
Volume (vph)	90	1017	63	69	1768	39	126	363	93	34	491	172
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	1071	66	73	1861	41	133	382	98	36	517	181
RTOR Reduction (vph)	0	7	0	0	2	0	0	0	64	0	34	0
Lane Group Flow (vph)	95	1130	0	73	1900	0	133	382	34	36	664	0
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	49.1	43.5		48.7	43.3		42.1	35.2	35.2	36.1	32.2	
Effective Green, g (s)	47.1	42.5		46.7	42.3		40.1	34.2	34.2	34.1	31.2	
Actuated g/C Ratio	0.47	0.42		0.47	0.42		0.40	0.34	0.34	0.34	0.31	
Clearance Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	140	1917		185	1918		206	570	485	228	949	
v/s Ratio Prot	c0.03	0.25		0.02	c0.42		c0.04	c0.23		0.00	0.22	
v/s Ratio Perm	0.29			0.17			0.22		0.02	0.05		
v/c Ratio	0.68	0.59		0.39	0.99		0.65	0.67	0.07	0.16	0.70	
Uniform Delay, d1	21.1	22.1		15.9	28.6		21.3	28.1	22.2	22.8	30.3	
Progression Factor	1.18	1.34		2.02	1.75		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.2	1.3		0.2	11.2		5.1	6.2	0.3	0.1	4.3	
Delay (s)	34.1	30.7		32.5	61.3		26.5	34.2	22.4	22.9	34.5	
Level of Service	C	C		C	E		C	C	C	C	C	
Approach Delay (s)		31.0			60.3			30.7			34.0	
Approach LOS		C			E			C			C	

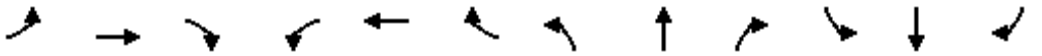
Intersection Summary			
HCM Average Control Delay	44.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1118	2220		1118	2230		1118	2177		1118	2230	
Flt Permitted	0.12	1.00		0.13	1.00		0.37	1.00		0.66	1.00	
Satd. Flow (perm)	139	2220		157	2230		440	2177		781	2230	
Volume (vph)	27	1327	65	53	1443	22	68	112	23	114	397	7
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	28	1368	67	55	1488	23	70	115	24	118	409	7
RTOR Reduction (vph)	0	4	0	0	1	0	0	18	0	0	2	0
Lane Group Flow (vph)	28	1431	0	55	1510	0	70	121	0	118	414	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	60.5	60.5		60.5	60.5		20.8	20.8		20.8	20.8	
Effective Green, g (s)	61.0	61.0		61.0	61.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.23	0.23		0.23	0.23	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	94	1505		106	1511		103	508		182	520	
v/s Ratio Prot		0.64			c0.68			0.06			c0.19	
v/s Ratio Perm	0.20			0.35			0.16			0.15		
v/c Ratio	0.30	0.95		0.52	1.00		0.68	0.24		0.65	0.80	
Uniform Delay, d1	5.9	13.1		7.2	14.5		31.4	28.0		31.2	32.5	
Progression Factor	0.41	0.27		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	4.7		17.0	23.0		30.6	1.1		16.5	12.0	
Delay (s)	4.4	8.3		24.2	37.4		62.0	29.1		47.7	44.5	
Level of Service	A	A		C	D		E	C		D	D	
Approach Delay (s)		8.2			37.0			40.1			45.2	
Approach LOS		A			D			D			D	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	103.4%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		0.95						0.95			0.95	
Frpb, ped/bikes		1.00						1.00			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3052						3068			3135	
Flt Permitted		0.99						1.00			0.88	
Satd. Flow (perm)		3052						3068			2779	
Volume (vph)	59	149	17	0	0	0	0	116	26	38	172	0
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	77	194	22	0	0	0	0	151	34	49	223	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	287	0	0	0	0	0	160	0	0	272	0
Confl. Peds. (#/hr)	28		18	18		28	6		7	7		6
Confl. Bikes (#/hr)			1						1			1
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		37.0						17.0			17.0	
Effective Green, g (s)		36.0						16.0			16.0	
Actuated g/C Ratio		0.60						0.27			0.27	
Clearance Time (s)		3.0						3.0			3.0	
Vehicle Extension (s)		5.0						3.0			3.0	
Lane Grp Cap (vph)		1831						818			741	
v/s Ratio Prot								0.05				
v/s Ratio Perm		0.09									c0.10	
v/c Ratio		0.16						0.20			0.37	
Uniform Delay, d1		5.3						17.0			17.9	
Progression Factor		0.93						1.00			1.00	
Incremental Delay, d2		0.2						0.5			1.4	
Delay (s)		5.1						17.6			19.3	
Level of Service		A						B			B	
Approach Delay (s)		5.1			0.0			17.6			19.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.0%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0		4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91				1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				0.97		1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00		0.98	1.00
Frt	1.00	1.00		1.00	0.99				0.86		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00		0.95	1.00
Satd. Flow (prot)	1583	4523		1583	4498				1396		1562	1371
Flt Permitted	0.95	1.00		0.95	1.00				1.00		0.95	1.00
Satd. Flow (perm)	1583	4523		1583	4498				1396		1562	1371
Volume (vph)	68	1127	26	25	1756	102	0	0	16	105	5	166
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	71	1174	27	26	1829	106	0	0	17	109	5	173
RTOR Reduction (vph)	0	2	0	0	5	0	0	0	13	0	0	133
Lane Group Flow (vph)	71	1199	0	26	1930	0	0	0	4	0	114	40
Confl. Peds. (#/hr)	18		42	42		18	15		14	14		15
Confl. Bikes (#/hr)			2			1			1			
Turn Type	Prot			Prot					custom	Perm		Perm
Protected Phases	5	2		1	6						4	
Permitted Phases									8	4		4
Actuated Green, G (s)	7.8	63.9		3.1	59.2				24.0		24.0	24.0
Effective Green, g (s)	6.8	62.9		2.1	58.2				23.0		23.0	23.0
Actuated g/C Ratio	0.07	0.63		0.02	0.58				0.23		0.23	0.23
Clearance Time (s)	3.0	3.0		3.0	3.0				3.0		3.0	3.0
Vehicle Extension (s)	2.0	5.0		2.0	5.0				3.0		3.0	3.0
Lane Grp Cap (vph)	108	2845		33	2618				321		359	315
v/s Ratio Prot	c0.04	0.27		0.02	c0.43							
v/s Ratio Perm									0.00		0.07	0.03
v/c Ratio	0.66	0.42		0.79	0.74				0.01		0.32	0.13
Uniform Delay, d1	45.5	9.4		48.7	15.3				29.7		32.0	30.5
Progression Factor	1.00	1.00		0.64	1.69				1.00		1.00	1.00
Incremental Delay, d2	10.5	0.5		34.7	0.7				0.1		2.3	0.8
Delay (s)	55.9	9.8		66.0	26.6				29.8		34.3	31.4
Level of Service	E	A		E	C				C		C	C
Approach Delay (s)		12.4			27.1			29.8			32.5	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1118	2230		1118	2232		1118	2166		1118	2192	
Flt Permitted	0.09	1.00		0.12	1.00		0.24	1.00		0.41	1.00	
Satd. Flow (perm)	110	2230		141	2232		277	2166		478	2192	
Volume (vph)	32	1372	22	92	1503	15	15	330	85	26	553	81
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	33	1400	22	94	1534	15	15	337	87	27	564	83
RTOR Reduction (vph)	0	1	0	0	1	0	0	26	0	0	13	0
Lane Group Flow (vph)	33	1421	0	94	1548	0	15	398	0	27	634	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	55.5	55.5		55.5	55.5		25.8	25.8		25.8	25.8	
Effective Green, g (s)	56.0	56.0		56.0	56.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.29	0.29		0.29	0.29	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	68	1388		88	1389		80	626		138	633	
v/s Ratio Prot		0.64			c0.69			0.18			c0.29	
v/s Ratio Perm	0.30			0.67			0.05			0.06		
v/c Ratio	0.49	1.02		1.07	1.11		0.19	0.64		0.20	1.00	
Uniform Delay, d1	9.2	17.0		17.0	17.0		24.1	27.9		24.1	32.0	
Progression Factor	1.00	1.00		0.63	0.57		0.31	0.21		1.00	1.00	
Incremental Delay, d2	22.7	30.3		75.8	55.7		3.8	3.7		3.1	36.2	
Delay (s)	31.9	47.3		86.6	65.4		11.3	9.5		27.3	68.2	
Level of Service	C	D		F	E		B	A		C	E	
Approach Delay (s)		47.0			66.6			9.5			66.6	
Approach LOS		D			E			A			E	

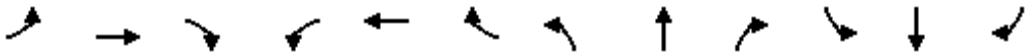
Intersection Summary			
HCM Average Control Delay	53.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	119.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00		0.95	
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1118	2188		1118	2229		1118	2235	1000		2178	
Flt Permitted	0.12	1.00		0.38	1.00		0.19	1.00	1.00		1.00	
Satd. Flow (perm)	138	2188		450	2229		226	2235	1000		2178	
Volume (vph)	23	492	80	123	1265	24	65	383	96	0	533	110
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	547	89	137	1406	27	72	426	107	0	592	122
RTOR Reduction (vph)	0	14	0	0	2	0	0	0	76	0	19	0
Lane Group Flow (vph)	26	622	0	137	1431	0	72	426	31	0	695	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8			
Actuated Green, G (s)	55.5	55.5		55.5	55.5		25.8	25.8	25.8		25.8	
Effective Green, g (s)	56.0	56.0		56.0	56.0		26.0	26.0	26.0		26.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.29	0.29	0.29		0.29	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2	4.2		4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	86	1361		280	1387		65	646	289		629	
v/s Ratio Prot		0.28			c0.64			0.19			c0.32	
v/s Ratio Perm	0.19			0.30			0.32		0.03			
v/c Ratio	0.30	0.46		0.49	1.03		1.11	0.66	0.11		1.10	
Uniform Delay, d1	7.9	9.0		9.2	17.0		32.0	28.1	23.5		32.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		0.45	
Incremental Delay, d2	8.8	1.1		6.0	32.8		144.2	5.2	0.7		54.8	
Delay (s)	16.7	10.1		15.2	49.8		176.2	33.3	24.2		69.3	
Level of Service	B	B		B	D		F	C	C		E	
Approach Delay (s)		10.3			46.8			48.7			69.3	
Approach LOS		B			D			D			E	

Intersection Summary			
HCM Average Control Delay	44.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	112.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		0.95						0.95			0.95	
Frpb, ped/bikes		1.00						0.98			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		1.00						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3038						3042			3132	
Flt Permitted		0.99						1.00			0.71	
Satd. Flow (perm)		3038						3042			2232	
Volume (vph)	35	96	0	0	0	0	0	653	121	86	489	0
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	38	105	0	0	0	0	0	718	133	95	537	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	143	0	0	0	0	0	826	0	0	632	0
Confl. Peds. (#/hr)	123		3	3		123	1		108	108		1
Confl. Bikes (#/hr)						6			4			2
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		27.0						27.0			27.0	
Effective Green, g (s)		26.0						26.0			26.0	
Actuated g/C Ratio		0.43						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1316						1318			967	
v/s Ratio Prot								0.27				
v/s Ratio Perm		0.05									c0.28	
v/c Ratio		0.11						0.63			0.65	
Uniform Delay, d1		10.1						13.2			13.4	
Progression Factor		0.34						1.00			1.00	
Incremental Delay, d2		0.2						2.3			3.4	
Delay (s)		3.6						15.5			16.9	
Level of Service		A						B			B	
Approach Delay (s)		3.6			0.0			15.5			16.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.9%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00		0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.98		1.00	1.00	0.86		0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1582	4375		1580	4443		1583	3167	1219		3014	
Flt Permitted	0.10	1.00		0.14	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (perm)	159	4375		225	4443		1583	3167	1219		3014	
Volume (vph)	61	1021	130	231	1550	91	132	650	113	0	529	108
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	64	1064	135	241	1615	95	138	677	118	0	551	112
RTOR Reduction (vph)	0	17	0	0	6	0	0	0	76	0	17	0
Lane Group Flow (vph)	64	1182	0	241	1704	0	138	677	42	0	646	0
Confl. Peds. (#/hr)	202		139	139		202	96		97	97		96
Confl. Bikes (#/hr)						3			1			1
Turn Type	pm+pt			pm+pt			Prot		Perm			
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2			6					8			
Actuated Green, G (s)	48.4	43.0		56.0	47.6		9.9	35.9	35.9		22.9	
Effective Green, g (s)	46.4	42.0		55.0	46.6		9.0	35.0	35.0		22.0	
Actuated g/C Ratio	0.47	0.43		0.56	0.48		0.09	0.36	0.36		0.22	
Clearance Time (s)	3.0	3.0		3.0	3.0		3.1	3.1	3.1		3.1	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	139	1875		251	2113		145	1131	435		677	
v/s Ratio Prot	0.02	0.27		c0.09	0.38		c0.09	0.21			c0.21	
v/s Ratio Perm	0.20			c0.45					0.03			
v/c Ratio	0.46	0.63		0.96	0.81		0.95	0.60	0.10		0.95	
Uniform Delay, d1	16.5	21.9		17.4	21.9		44.3	25.8	21.0		37.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.9	1.6		45.4	3.4		59.5	2.3	0.4		25.0	
Delay (s)	17.4	23.5		62.8	25.3		103.8	28.1	21.4		62.5	
Level of Service	B	C		E	C		F	C	C		E	
Approach Delay (s)		23.2			29.9			38.5			62.5	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.1%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	0.99		1.00	0.98	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2986			3042		1583	3146		1583	3110	
Flt Permitted		0.89			0.85		0.31	1.00		0.28	1.00	
Satd. Flow (perm)		2664			2611		523	3146		475	3110	
Volume (vph)	29	107	69	58	168	55	112	770	36	44	577	78
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	30	110	71	60	173	57	115	794	37	45	595	80
RTOR Reduction (vph)	0	49	0	0	23	0	0	3	0	0	11	0
Lane Group Flow (vph)	0	162	0	0	267	0	115	828	0	45	664	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		29.0			29.0		54.6	48.3		49.4	45.7	
Effective Green, g (s)		28.0			28.0		52.6	47.3		47.4	44.7	
Actuated g/C Ratio		0.31			0.31		0.58	0.53		0.53	0.50	
Clearance Time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Vehicle Extension (s)		3.0			3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		829			812		368	1653		283	1545	
v/s Ratio Prot							c0.02	c0.26		0.00	0.21	
v/s Ratio Perm		0.06			c0.10		0.16			0.08		
v/c Ratio		0.20			0.33		0.31	0.50		0.16	0.43	
Uniform Delay, d1		22.7			23.8		9.0	13.7		10.7	14.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			0.2		0.2	1.1		0.1	0.9	
Delay (s)		23.3			24.0		9.2	14.8		10.8	15.4	
Level of Service		C			C		A	B		B	B	
Approach Delay (s)		23.3			24.0			14.1			15.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.3%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95			0.95	
Frt	1.00	0.99		1.00	1.00		1.00	0.98			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1583	4521		1583	4550		1583	3110			3033	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1583	4521		1583	4550		1583	3110			3033	
Volume (vph)	33	1472	66	10	2258	0	245	379	51	0	266	104
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	33	1487	67	10	2281	0	247	383	52	0	269	105
RTOR Reduction (vph)	0	5	0	0	0	0	0	12	0	0	45	0
Lane Group Flow (vph)	33	1549	0	10	2281	0	247	423	0	0	329	0
Turn Type	Prot			Prot			Split					
Protected Phases	1!	2!		5!	6!		8	8			7	
Permitted Phases												
Actuated Green, G (s)	5.1	33.9		4.8	33.2		14.0	14.0			22.0	
Effective Green, g (s)	4.6	33.4		4.8	33.2		14.0	14.0			22.0	
Actuated g/C Ratio	0.05	0.37		0.05	0.37		0.16	0.16			0.24	
Clearance Time (s)	3.5	3.5		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	81	1678		84	1678		246	484			741	
v/s Ratio Prot	c0.02	0.34		0.01	c0.50		c0.16	0.14			c0.11	
v/s Ratio Perm												
v/c Ratio	0.41	0.92		0.12	1.36		1.00	0.87			0.44	
Uniform Delay, d1	41.4	27.1		40.6	28.4		38.0	37.1			28.8	
Progression Factor	1.22	0.92		1.53	0.32		1.00	1.00			1.00	
Incremental Delay, d2	1.1	3.8		0.1	162.1		58.4	16.0			1.9	
Delay (s)	51.7	28.8		62.3	171.1		96.4	53.1			30.7	
Level of Service	D	C		E	F		F	D			C	
Approach Delay (s)		29.3			170.6			68.8			30.7	
Approach LOS		C			F			E			C	

Intersection Summary			
HCM Average Control Delay	100.5	HCM Level of Service	F
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt		0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4516		1583	4522		1583	3151		1583	3167	
Flt Permitted		1.00		0.95	1.00		0.56	1.00		0.18	1.00	
Satd. Flow (perm)		4516		1583	4522		935	3151		303	3167	
Volume (vph)	0	1433	75	26	2132	91	126	613	21	65	237	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1508	79	27	2244	96	133	645	22	68	249	0
RTOR Reduction (vph)	0	6	0	0	4	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1581	0	27	2336	0	133	664	0	68	249	0
Turn Type				Prot			Perm			Perm		
Protected Phases		2!		5!	6			7			7	
Permitted Phases							7			7		
Actuated Green, G (s)		33.9		4.8	33.2		22.0	22.0		22.0	22.0	
Effective Green, g (s)		33.4		4.8	33.2		22.0	22.0		22.0	22.0	
Actuated g/C Ratio		0.37		0.05	0.37		0.24	0.24		0.24	0.24	
Clearance Time (s)		3.5		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1676		84	1668		229	770		74	774	
v/s Ratio Prot		0.35		c0.02	c0.52			0.21			0.08	
v/s Ratio Perm							0.14			c0.22		
v/c Ratio		0.94		0.32	1.40		0.58	0.86		0.92	0.32	
Uniform Delay, d1		27.4		41.0	28.4		29.9	32.5		33.1	27.9	
Progression Factor		0.31		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.8		2.2	183.8		10.3	12.2		83.7	1.1	
Delay (s)		15.2		43.2	212.2		40.3	44.8		116.8	29.0	
Level of Service		B		D	F		D	D		F	C	
Approach Delay (s)		15.2			210.3			44.0			47.8	
Approach LOS		B			F			D			D	

Intersection Summary			
HCM Average Control Delay	112.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.95						0.95		1.00	0.95	
Frpb, ped/bikes		1.00						0.97		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.95	1.00	
Frt		0.99						0.94		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		3059						2890		1507	3167	
Flt Permitted		0.99						1.00		0.64	1.00	
Satd. Flow (perm)		3059						2890		1013	3167	
Volume (vph)	16	80	5	0	0	0	0	93	62	59	292	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	19	93	6	0	0	0	0	108	72	69	340	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	53	0	0	0	0
Lane Group Flow (vph)	0	114	0	0	0	0	0	127	0	69	340	0
Confl. Peds. (#/hr)	51		52	52		51	5		55	55		
Confl. Bikes (#/hr)						3						5
Turn Type	Perm									Perm		
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		17.0						17.0		17.0	17.0	
Effective Green, g (s)		16.0						16.0		16.0	16.0	
Actuated g/C Ratio		0.27						0.27		0.27	0.27	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Vehicle Extension (s)		5.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		816						771		270	845	
v/s Ratio Prot								0.04			c0.11	
v/s Ratio Perm		0.04								0.07		
v/c Ratio		0.14						0.16		0.26	0.40	
Uniform Delay, d1		16.8						16.9		17.3	18.1	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		0.4						0.5		2.3	1.4	
Delay (s)		17.1						17.3		19.6	19.5	
Level of Service		B						B		B	B	
Approach Delay (s)		17.1			0.0			17.3			19.5	
Approach LOS		B			A			B			B	

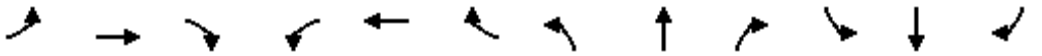
Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.90		1.00	1.00	0.78
Flpb, ped/bikes	0.99	1.00			1.00		0.81	1.00		1.00	1.00	1.00
Frt	1.00	1.00			1.00		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1560	4518			4492		1287	1420		1583	1667	1102
Flt Permitted	0.08	1.00			1.00		0.70	1.00		0.95	1.00	1.00
Satd. Flow (perm)	129	4518			4492		942	1420		1583	1667	1102
Volume (vph)	39	1004	14	0	1656	47	105	76	42	76	91	110
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	41	1046	15	0	1725	49	109	79	44	79	95	115
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	41	1060	0	0	1771	0	109	123	0	79	95	115
Confl. Peds. (#/hr)	244		131	131		244	166		211	211		166
Confl. Bikes (#/hr)			3			5			2			3
Turn Type	Perm						Perm			Prot		custom
Protected Phases		2			6			8		7		
Permitted Phases	2						8				4	4
Actuated Green, G (s)	51.8	51.8			51.8		21.0	21.0		8.2	32.2	32.2
Effective Green, g (s)	50.8	50.8			50.8		20.0	20.0		7.2	31.2	31.2
Actuated g/C Ratio	0.56	0.56			0.56		0.22	0.22		0.08	0.35	0.35
Clearance Time (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Vehicle Extension (s)	5.0	5.0			5.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	73	2550			2535		209	316		127	578	382
v/s Ratio Prot		0.23			c0.39			0.09		c0.05		
v/s Ratio Perm	0.32						c0.12				0.06	0.10
v/c Ratio	0.56	0.42			0.70		0.52	0.39		0.62	0.16	0.30
Uniform Delay, d1	12.5	11.2			14.1		30.8	29.8		40.1	20.4	21.4
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	27.7	0.5			1.6		9.0	3.6		9.1	0.6	2.0
Delay (s)	40.2	11.7			15.7		39.8	33.4		49.2	21.0	23.5
Level of Service	D	B			B		D	C		D	C	C
Approach Delay (s)		12.7			15.7			36.4			29.7	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBR2
Lane Configurations									
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0
Lane Util. Factor		1.00	0.91		1.00	0.91			1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99			1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00			1.00
Frt		1.00	1.00		1.00	0.99			0.86
Flt Protected		0.95	1.00		0.95	1.00			1.00
Satd. Flow (prot)		1583	4515		1583	4457			1442
Flt Permitted		0.95	1.00		0.95	1.00			1.00
Satd. Flow (perm)		1583	4515		1583	4457			1442
Volume (vph)	343	93	1073	36	332	1376	42	41	32
Peak-hour factor, PHF	0.92	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92
Adj. Flow (vph)	373	97	1118	38	346	1433	44	43	35
RTOR Reduction (vph)	0	0	3	0	0	3	0	0	31
Lane Group Flow (vph)	0	470	1153	0	346	1517	0	0	4
Confl. Peds. (#/hr)	63	81		28	28		63	81	35
Confl. Bikes (#/hr)				5			9	10	1
Turn Type	Prot	Prot			Prot				custom
Protected Phases	1	1	2		8	6			1
Permitted Phases									
Actuated Green, G (s)		13.5	53.3		24.2	80.5			13.5
Effective Green, g (s)		12.5	52.3		23.2	79.5			12.5
Actuated g/C Ratio		0.12	0.52		0.23	0.80			0.12
Clearance Time (s)		3.0	3.0		3.0	3.0			3.0
Vehicle Extension (s)		2.5	5.0		3.0	5.0			2.5
Lane Grp Cap (vph)		198	2361		367	3543			180
v/s Ratio Prot		c0.30	c0.26		c0.22	0.34			0.00
v/s Ratio Perm									
v/c Ratio		2.37	0.49		0.94	0.43			0.02
Uniform Delay, d1		43.8	15.3		37.7	3.2			38.4
Progression Factor		1.20	1.94		1.00	1.00			1.00
Incremental Delay, d2		619.6	0.1		32.4	0.4			0.0
Delay (s)		671.9	29.8		70.1	3.6			38.4
Level of Service		F	C		E	A			D
Approach Delay (s)			215.4			15.9			
Approach LOS			F			B			

Intersection Summary			
HCM Average Control Delay	108.1	HCM Level of Service	F
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.2%	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												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.86	0.86		1.00	0.91			0.95	1.00		0.86	0.86
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	961	3007		1118	3202			2235	1000		3035	860
Flt Permitted	0.95	0.68		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	961	2069		1118	3202			2235	1000		3035	860
Volume (vph)	639	1329	16	151	1223	26	0	596	13	0	1366	362
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	666	1384	17	157	1274	27	0	621	14	0	1423	377
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	10	0	0	271
Lane Group Flow (vph)	410	1656	0	157	1299	0	0	621	4	0	1423	106
Turn Type	Prot			Prot					Perm			Over
Protected Phases	7	4		3	8			2			6	7
Permitted Phases									2			
Actuated Green, G (s)	20.9	37.7		19.6	36.4			28.4	28.4		28.4	20.9
Effective Green, g (s)	22.0	38.3		20.7	37.0			29.0	29.0		29.0	22.0
Actuated g/C Ratio	0.22	0.38		0.21	0.37			0.29	0.29		0.29	0.22
Clearance Time (s)	5.1	4.6		5.1	4.6			4.6	4.6		4.6	5.1
Vehicle Extension (s)	3.0	3.0		5.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	211	999		231	1185			648	290		880	189
v/s Ratio Prot	c0.43	0.36		0.14	c0.41			0.28			c0.47	0.12
v/s Ratio Perm		c0.27							0.00			
v/c Ratio	1.94	1.66		0.68	1.10			0.96	0.01		1.62	0.56
Uniform Delay, d1	39.0	30.9		36.6	31.5			34.9	25.3		35.5	34.7
Progression Factor	1.00	1.00		1.05	0.38			1.00	1.00		1.00	1.00
Incremental Delay, d2	441.3	300.3		4.8	50.3			26.5	0.1		282.9	3.8
Delay (s)	480.3	331.2		43.0	62.3			61.4	25.4		318.4	38.5
Level of Service	F	F		D	E			E	C		F	D
Approach Delay (s)		360.7			60.3			60.6			259.8	
Approach LOS		F			E			E			F	

Intersection Summary			
HCM Average Control Delay	224.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	140.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frt		0.99		1.00	1.00		1.00	1.00	0.85	1.00	0.97	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3172		1118	3205		1118	2235	1000	1118	2159	
Flt Permitted		0.71		0.95	1.00		0.14	1.00	1.00	0.35	1.00	
Satd. Flow (perm)		2265		1118	3205		162	2235	1000	413	2159	
Volume (vph)	168	1015	46	171	971	13	41	458	264	27	720	214
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	177	1068	48	180	1022	14	43	482	278	28	758	225
RTOR Reduction (vph)	0	4	0	0	1	0	0	0	197	0	28	0
Lane Group Flow (vph)	0	1289	0	180	1035	0	43	482	81	28	955	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Actuated Green, G (s)		37.7		19.6	36.4		28.4	28.4	28.4	28.4	28.4	
Effective Green, g (s)		38.3		20.7	37.0		29.0	29.0	29.0	29.0	29.0	
Actuated g/C Ratio		0.38		0.21	0.37		0.29	0.29	0.29	0.29	0.29	
Clearance Time (s)		4.6		5.1	4.6		4.6	4.6	4.6	4.6	4.6	
Vehicle Extension (s)		3.0		5.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1067		231	1186		47	648	290	120	626	
v/s Ratio Prot		c0.27		0.16	c0.32			0.22			c0.44	
v/s Ratio Perm		c0.20					0.26		0.08	0.07		
v/c Ratio		1.21		0.78	0.87		0.91	0.74	0.28	0.23	1.53	
Uniform Delay, d1		30.9		37.5	29.3		34.3	32.1	27.4	27.0	35.5	
Progression Factor		0.58		0.92	1.40		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		94.6		16.3	8.3		107.9	7.6	2.4	4.5	244.8	
Delay (s)		112.7		50.9	49.5		142.2	39.7	29.8	31.5	280.3	
Level of Service		F		D	D		F	D	C	C	F	
Approach Delay (s)		112.7			49.7			41.8			273.4	
Approach LOS		F			D			D			F	

Intersection Summary			
HCM Average Control Delay	119.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	132.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99			0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1583	4520			4510		1583	1667	1417	1583	3137	
Flt Permitted	0.09	1.00			1.00		0.30	1.00	1.00	0.40	1.00	
Satd. Flow (perm)	147	4520			4510		505	1667	1417	663	3137	
Volume (vph)	159	1608	74	0	1450	91	137	297	94	88	478	32
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	169	1711	79	0	1543	97	146	316	100	94	509	34
RTOR Reduction (vph)	0	4	0	0	7	0	0	0	68	0	5	0
Lane Group Flow (vph)	169	1786	0	0	1633	0	146	316	32	94	538	0
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	52.5	52.5			42.5		39.8	32.9	32.9	37.2	31.6	
Effective Green, g (s)	51.5	51.5			41.5		37.8	31.9	31.9	35.2	30.6	
Actuated g/C Ratio	0.52	0.52			0.42		0.38	0.32	0.32	0.35	0.31	
Clearance Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Vehicle Extension (s)	2.0	5.0			5.0		2.0	3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	162	2328			1872		254	532	452	276	960	
v/s Ratio Prot	c0.06	0.40			0.36		c0.03	c0.19		0.02	0.17	
v/s Ratio Perm	c0.48						0.18		0.02	0.10		
v/c Ratio	1.04	0.77			0.87		0.57	0.59	0.07	0.34	0.56	
Uniform Delay, d1	22.5	19.4			26.8		22.5	28.6	23.7	22.8	29.1	
Progression Factor	1.30	1.34			1.90		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	79.3	2.3			4.2		2.0	4.8	0.3	0.3	2.4	
Delay (s)	108.5	28.4			55.1		24.5	33.4	24.0	23.1	31.4	
Level of Service	F	C			E		C	C	C	C	C	
Approach Delay (s)		35.3			55.1			29.4			30.2	
Approach LOS		D			E			C			C	

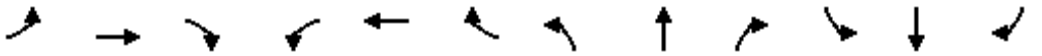
Intersection Summary			
HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1118	2223		1118	2219		1118	2202		1118	2227	
Flt Permitted	0.11	1.00		0.08	1.00		0.48	1.00		0.36	1.00	
Satd. Flow (perm)	134	2223		93	2219		563	2202		421	2227	
Volume (vph)	13	1615	64	50	1414	72	45	377	42	100	300	8
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	13	1665	66	52	1458	74	46	389	43	103	309	8
RTOR Reduction (vph)	0	3	0	0	4	0	0	9	0	0	2	0
Lane Group Flow (vph)	13	1728	0	52	1528	0	46	423	0	103	315	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	60.5	60.5		60.5	60.5		20.8	20.8		20.8	20.8	
Effective Green, g (s)	61.0	61.0		61.0	61.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.23	0.23		0.23	0.23	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	91	1507		63	1504		131	514		98	520	
v/s Ratio Prot		c0.78			0.69			0.19			0.14	
v/s Ratio Perm	0.10			0.56			0.08			c0.24		
v/c Ratio	0.14	1.15		0.83	1.02		0.35	0.82		1.05	0.61	
Uniform Delay, d1	5.2	14.5		10.6	14.5		28.8	32.7		34.5	30.8	
Progression Factor	0.62	0.41		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	66.8		71.0	27.2		7.3	13.8		105.4	5.2	
Delay (s)	3.5	72.7		81.6	41.7		36.1	46.6		139.9	36.0	
Level of Service	A	E		F	D		D	D		F	D	
Approach Delay (s)		72.2			43.0			45.6			61.4	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM Average Control Delay	57.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		0.95						0.95			0.95	
Frpb, ped/bikes		0.98						0.99			1.00	
Flpb, ped/bikes		1.00						1.00			0.99	
Frt		0.97						0.98			1.00	
Flt Protected		1.00						1.00			0.99	
Satd. Flow (prot)		3017						3060			3120	
Flt Permitted		1.00						1.00			0.83	
Satd. Flow (perm)		3017						3060			2612	
Volume (vph)	24	316	76	0	0	0	0	289	51	71	351	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	343	83	0	0	0	0	314	55	77	382	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	434	0	0	0	0	0	346	0	0	459	0
Confl. Peds. (#/hr)	5		38				63		59	59		63
Confl. Bikes (#/hr)			5						1			1
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		37.0						17.0			17.0	
Effective Green, g (s)		36.0						16.0			16.0	
Actuated g/C Ratio		0.60						0.27			0.27	
Clearance Time (s)		3.0						3.0			3.0	
Vehicle Extension (s)		5.0						3.0			3.0	
Lane Grp Cap (vph)		1810						816			697	
v/s Ratio Prot								0.11				
v/s Ratio Perm		0.14									c0.18	
v/c Ratio		0.24						0.42			0.66	
Uniform Delay, d1		5.6						18.2			19.6	
Progression Factor		0.93						1.00			1.00	
Incremental Delay, d2		0.3						1.6			4.8	
Delay (s)		5.5						19.8			24.4	
Level of Service		A						B			C	
Approach Delay (s)		5.5			0.0			19.8			24.4	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

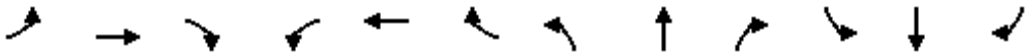


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0		4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91				1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99				0.94		1.00	0.92
Flpb, ped/bikes	1.00	1.00		0.99	1.00				1.00		0.95	1.00
Frt	1.00	1.00		1.00	0.99				0.86		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00		0.95	1.00
Satd. Flow (prot)	1583	4511		1565	4455				1355		1518	1302
Flt Permitted	0.95	1.00		0.95	1.00				1.00		0.95	1.00
Satd. Flow (perm)	1583	4511		1565	4455				1355		1518	1302
Volume (vph)	148	1409	46	3	1314	131	0	0	69	162	10	229
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	154	1468	48	3	1369	136	0	0	72	169	10	239
RTOR Reduction (vph)	0	3	0	0	12	0	0	0	52	0	0	132
Lane Group Flow (vph)	154	1513	0	3	1493	0	0	0	20	0	179	107
Confl. Peds. (#/hr)	26		44	44		26	50		36	36		50
Confl. Bikes (#/hr)			5			6						3
Turn Type	Prot			Prot					custom	Perm		Perm
Protected Phases	5	2		1	6						4	
Permitted Phases									8	4		4
Actuated Green, G (s)	11.7	60.9		1.1	50.3				29.0		29.0	29.0
Effective Green, g (s)	10.7	59.9		0.1	49.3				28.0		28.0	28.0
Actuated g/C Ratio	0.11	0.60		0.00	0.49				0.28		0.28	0.28
Clearance Time (s)	3.0	3.0		3.0	3.0				3.0		3.0	3.0
Vehicle Extension (s)	2.0	5.0		2.0	5.0				3.0		3.0	3.0
Lane Grp Cap (vph)	169	2702		2	2196				379		425	365
v/s Ratio Prot	c0.10	0.34		0.00	c0.34							
v/s Ratio Perm									0.01		0.12	0.08
v/c Ratio	0.91	0.56		1.50	0.68				0.05		0.42	0.29
Uniform Delay, d1	44.2	12.1		50.0	19.3				26.3		29.4	28.2
Progression Factor	1.00	1.00		0.61	1.87				1.00		1.00	1.00
Incremental Delay, d2	43.7	0.8		689.4	0.9				0.3		3.0	2.0
Delay (s)	87.9	12.9		719.6	37.2				26.6		32.4	30.2
Level of Service	F	B		F	D				C		C	C
Approach Delay (s)		19.9			38.5			26.6			31.2	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.2%	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												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1118	2225		1118	2225		1118	2162		1118	2184	
Flt Permitted	0.11	1.00		0.09	1.00		0.34	1.00		0.16	1.00	
Satd. Flow (perm)	130	2225		111	2225		400	2162		188	2184	
Volume (vph)	51	1459	44	52	1382	42	86	662	186	57	402	72
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	53	1520	46	54	1440	44	90	690	194	59	419	75
RTOR Reduction (vph)	0	2	0	0	3	0	0	29	0	0	16	0
Lane Group Flow (vph)	53	1564	0	54	1481	0	90	855	0	59	478	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	56.5	56.5		56.5	56.5		24.8	24.8		24.8	24.8	
Effective Green, g (s)	57.0	57.0		57.0	57.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.28	0.28		0.28	0.28	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	82	1409		70	1409		111	601		52	607	
v/s Ratio Prot		c0.70			0.67			c0.40			0.22	
v/s Ratio Perm	0.41			0.49			0.23			0.31		
v/c Ratio	0.65	1.11		0.77	1.05		0.81	1.42		1.13	0.79	
Uniform Delay, d1	10.2	16.5		11.8	16.5		30.3	32.5		32.5	30.0	
Progression Factor	1.00	1.00		0.61	0.52		0.54	0.49		1.00	1.00	
Incremental Delay, d2	33.2	60.1		19.8	28.8		17.2	193.2		166.6	10.0	
Delay (s)	43.4	76.6		27.0	37.5		33.7	209.1		199.1	40.0	
Level of Service	D	E		C	D		C	F		F	D	
Approach Delay (s)		75.5			37.1			192.9			57.0	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM Average Control Delay	85.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	121.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00		0.95	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1118	2188		1118	2218		1118	2235	1000		2191	
Flt Permitted	0.30	1.00		0.13	1.00		0.34	1.00	1.00		1.00	
Satd. Flow (perm)	354	2188		149	2218		396	2235	1000		2191	
Volume (vph)	116	1083	180	70	714	40	82	751	192	0	452	68
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	122	1140	189	74	752	42	86	791	202	0	476	72
RTOR Reduction (vph)	0	15	0	0	5	0	0	0	53	0	13	0
Lane Group Flow (vph)	122	1314	0	74	789	0	86	791	149	0	535	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8			
Actuated Green, G (s)	51.5	51.5		51.5	51.5		29.8	29.8	29.8		29.8	
Effective Green, g (s)	52.0	52.0		52.0	52.0		30.0	30.0	30.0		30.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.33	0.33	0.33		0.33	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2	4.2		4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	205	1264		86	1282		132	745	333		730	
v/s Ratio Prot		c0.60			0.36			c0.35			0.24	
v/s Ratio Perm	0.34			0.50			0.22		0.15			
v/c Ratio	0.60	1.04		0.86	0.62		0.65	1.06	0.45		0.73	
Uniform Delay, d1	12.2	19.0		16.0	12.5		25.5	30.0	23.5		26.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		0.41	
Incremental Delay, d2	12.1	36.3		63.9	2.2		22.3	50.6	4.3		4.0	
Delay (s)	24.3	55.3		79.9	14.7		47.9	80.6	27.8		14.9	
Level of Service	C	E		E	B		D	F	C		B	
Approach Delay (s)		52.7			20.2			68.1			14.9	
Approach LOS		D			C			E			B	

Intersection Summary			
HCM Average Control Delay	44.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		0.95						0.95			0.95	
Frpb, ped/bikes		1.00						0.97			1.00	
Flpb, ped/bikes		0.98						1.00			0.99	
Frt		1.00						0.98			1.00	
Flt Protected		0.98						1.00			0.99	
Satd. Flow (prot)		3047						2988			3127	
Flt Permitted		0.98						1.00			0.67	
Satd. Flow (perm)		3047						2988			2114	
Volume (vph)	159	260	0	0	0	0	0	749	146	97	564	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	185	302	0	0	0	0	0	871	170	113	656	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	0	487	0	0	0	0	0	1014	0	0	769	0
Confl. Peds. (#/hr)	60								223	223		
Confl. Bikes (#/hr)			1						3			
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		21.0						33.0			33.0	
Effective Green, g (s)		20.0						32.0			32.0	
Actuated g/C Ratio		0.33						0.53			0.53	
Clearance Time (s)		3.0						3.0			3.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1016						1594			1127	
v/s Ratio Prot								0.34				
v/s Ratio Perm		0.16									c0.36	
v/c Ratio		0.48						0.64			0.68	
Uniform Delay, d1		15.9						9.9			10.3	
Progression Factor		1.18						1.00			1.00	
Incremental Delay, d2		1.5						2.0			3.4	
Delay (s)		20.2						11.8			13.6	
Level of Service		C						B			B	
Approach Delay (s)		20.2			0.0			11.8			13.6	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.4%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00		0.95	
Frpb, ped/bikes	1.00	0.97		1.00	0.97		1.00	1.00	0.80		0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1579	4352		1583	4330		1583	3167	1133		3035	
Flt Permitted	0.13	1.00		0.09	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (perm)	212	4352		148	4330		1583	3167	1133		3035	
Volume (vph)	133	1457	149	324	1118	137	149	614	119	0	499	78
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	141	1550	159	345	1189	146	159	653	127	0	531	83
RTOR Reduction (vph)	0	13	0	0	15	0	0	0	83	0	12	0
Lane Group Flow (vph)	141	1696	0	345	1320	0	159	653	44	0	602	0
Confl. Peds. (#/hr)	216		278	278		216	112		142	142		112
Confl. Bikes (#/hr)			9			5			5			3
Turn Type	pm+pt			pm+pt			Prot		Perm			
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2			6					8			
Actuated Green, G (s)	53.1	45.0		54.9	45.9		8.9	34.9	34.9		22.9	
Effective Green, g (s)	51.1	44.0		52.9	44.9		8.0	34.0	34.0		22.0	
Actuated g/C Ratio	0.52	0.45		0.54	0.46		0.08	0.35	0.35		0.22	
Clearance Time (s)	3.0	3.0		3.0	3.0		3.1	3.1	3.1		3.1	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	210	1954		197	1984		129	1099	393		681	
v/s Ratio Prot	0.05	0.39		c0.14	0.30		c0.10	0.21			c0.20	
v/s Ratio Perm	0.30			c0.80					0.04			
v/c Ratio	0.67	0.87		1.75	0.67		1.23	0.59	0.11		0.88	
Uniform Delay, d1	14.3	24.4		24.7	20.7		45.0	26.3	21.7		36.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	6.5	5.5		358.2	1.8		154.7	2.4	0.6		15.5	
Delay (s)	20.8	29.9		382.9	22.5		199.7	28.7	22.3		52.2	
Level of Service	C	C		F	C		F	C	C		D	
Approach Delay (s)		29.2			96.5			56.8			52.2	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM Average Control Delay	59.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95		1.00	0.95		1.00	0.95	
Frt		0.96			0.96		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3011			2995		1583	3121		1583	3133	
Flt Permitted		0.85			0.69		0.22	1.00		0.25	1.00	
Satd. Flow (perm)		2581			2109		363	3121		423	3133	
Volume (vph)	62	230	114	81	115	71	84	706	75	68	789	60
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	68	253	125	89	126	78	92	776	82	75	867	66
RTOR Reduction (vph)	0	45	0	0	41	0	0	8	0	0	5	0
Lane Group Flow (vph)	0	401	0	0	252	0	92	850	0	75	928	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		29.0			29.0		52.4	46.6		51.6	46.2	
Effective Green, g (s)		28.0			28.0		50.4	45.6		49.6	45.2	
Actuated g/C Ratio		0.31			0.31		0.56	0.51		0.55	0.50	
Clearance Time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Vehicle Extension (s)		3.0			3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		803			656		268	1581		290	1573	
v/s Ratio Prot							c0.02	0.27		0.01	c0.30	
v/s Ratio Perm		c0.16			0.12		0.17			0.13		
v/c Ratio		0.50			0.38		0.34	0.54		0.26	0.59	
Uniform Delay, d1		25.3			24.2		10.4	15.1		10.2	15.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.2			0.4		0.3	1.3		0.2	1.6	
Delay (s)		27.5			24.6		10.7	16.4		10.4	17.5	
Level of Service		C			C		B	B		B	B	
Approach Delay (s)		27.5			24.6			15.8			16.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.0%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95			0.95	
Frt	1.00	1.00		1.00	1.00		1.00	0.96			0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1583	4531		1583	4550		1583	3053			3078	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1583	4531		1583	4550		1583	3053			3078	
Volume (vph)	54	2074	59	62	1755	0	117	217	68	0	463	106
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	56	2160	61	65	1828	0	122	226	71	0	482	110
RTOR Reduction (vph)	0	3	0	0	0	0	0	35	0	0	22	0
Lane Group Flow (vph)	56	2218	0	65	1828	0	122	262	0	0	570	0
Turn Type	Prot			Prot			Split					
Protected Phases	1!	2!		5!	6!		8	8			7	
Permitted Phases												
Actuated Green, G (s)	5.1	35.8		6.9	33.0		12.1	12.1			22.0	
Effective Green, g (s)	4.6	35.3		6.9	33.0		12.1	12.1			22.0	
Actuated g/C Ratio	0.05	0.39		0.08	0.37		0.13	0.13			0.24	
Clearance Time (s)	3.5	3.5		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	81	1777		121	1668		213	410			752	
v/s Ratio Prot	0.04	c0.49		c0.04	0.40		0.08	c0.09			c0.19	
v/s Ratio Perm												
v/c Ratio	0.69	1.25		0.54	1.10		0.57	0.64			0.76	
Uniform Delay, d1	42.0	27.4		40.0	28.5		36.5	36.9			31.5	
Progression Factor	1.26	0.55		1.50	0.37		1.00	1.00			1.00	
Incremental Delay, d2	2.3	112.1		0.4	44.2		3.7	3.3			7.0	
Delay (s)	55.3	127.2		60.4	54.8		40.2	40.2			38.6	
Level of Service	E	F		E	D		D	D			D	
Approach Delay (s)		125.4			55.0			40.2			38.6	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM Average Control Delay	82.9	HCM Level of Service	F
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt		0.99		1.00	0.99		1.00	0.98		1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4518		1583	4514		1583	3089		1583	3167	
Flt Permitted		1.00		0.95	1.00		0.29	1.00		0.40	1.00	
Satd. Flow (perm)		4518		1583	4514		482	3089		666	3167	
Volume (vph)	0	2044	101	55	1669	93	108	324	63	106	503	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	2107	104	57	1721	96	111	334	65	109	519	0
RTOR Reduction (vph)	0	5	0	0	6	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	2206	0	57	1811	0	111	381	0	109	519	0
Turn Type				Prot			Perm			Perm		
Protected Phases		2!		5!	6			7			7	
Permitted Phases							7			7		
Actuated Green, G (s)		35.8		6.9	33.0		22.0	22.0		22.0	22.0	
Effective Green, g (s)		35.3		6.9	33.0		22.0	22.0		22.0	22.0	
Actuated g/C Ratio		0.39		0.08	0.37		0.24	0.24		0.24	0.24	
Clearance Time (s)		3.5		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1772		121	1655		118	755		163	774	
v/s Ratio Prot		c0.49		c0.04	0.40			0.12			0.16	
v/s Ratio Perm							c0.23			0.16		
v/c Ratio		1.24		0.47	1.09		0.94	0.50		0.67	0.67	
Uniform Delay, d1		27.4		39.8	28.5		33.4	29.3		30.7	30.7	
Progression Factor		0.20		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		110.6		2.9	52.5		68.1	2.4		19.7	4.6	
Delay (s)		116.1		42.7	81.0		101.5	31.7		50.4	35.3	
Level of Service		F		D	F		F	C		D	D	
Approach Delay (s)		116.1			79.9			46.9			37.9	
Approach LOS		F			E			D			D	

Intersection Summary			
HCM Average Control Delay	86.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.1
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.95						0.95		1.00	0.95	
Frpb, ped/bikes		0.97						0.93		1.00	1.00	
Flpb, ped/bikes		0.95						1.00		0.80	1.00	
Frt		0.98						0.97		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		2859						2859		1270	3167	
Flt Permitted		0.99						1.00		0.51	1.00	
Satd. Flow (perm)		2859						2859		681	3167	
Volume (vph)	44	224	31	0	0	0	0	263	67	89	370	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	236	33	0	0	0	0	277	71	94	389	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	38	0	0	0	0
Lane Group Flow (vph)	0	300	0	0	0	0	0	310	0	94	389	0
Confl. Peds. (#/hr)	173		248	248		173	221		404	404		221
Confl. Bikes (#/hr)			3			2			1			4
Turn Type	Perm									Perm		
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		17.0						17.0		17.0	17.0	
Effective Green, g (s)		16.0						16.0		16.0	16.0	
Actuated g/C Ratio		0.27						0.27		0.27	0.27	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Vehicle Extension (s)		5.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		762						762		182	845	
v/s Ratio Prot								0.11			0.12	
v/s Ratio Perm		0.11								c0.14		
v/c Ratio		0.39						0.41		0.52	0.46	
Uniform Delay, d1		18.0						18.1		18.7	18.4	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		1.5						1.6		10.1	1.8	
Delay (s)		19.6						19.7		28.8	20.2	
Level of Service		B						B		C	C	
Approach Delay (s)		19.6			0.0			19.7			21.9	
Approach LOS		B			A			B			C	

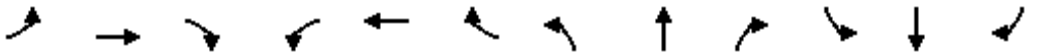
Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99			0.97		1.00	0.87		1.00	1.00	0.78
Flpb, ped/bikes	0.97	1.00			1.00		0.81	1.00		1.00	1.00	1.00
Frt	1.00	1.00			0.99		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1541	4509			4375		1277	1353		1583	1667	1102
Flt Permitted	0.12	1.00			1.00		0.71	1.00		0.95	1.00	1.00
Satd. Flow (perm)	197	4509			4375		956	1353		1583	1667	1102
Volume (vph)	100	1564	29	0	1306	121	111	97	82	127	70	154
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	1596	30	0	1333	123	113	99	84	130	71	157
RTOR Reduction (vph)	0	2	0	0	12	0	0	0	0	0	0	0
Lane Group Flow (vph)	102	1624	0	0	1444	0	113	183	0	130	71	157
Confl. Peds. (#/hr)	244		131	131		244	166		211	211		166
Confl. Bikes (#/hr)			3			5			2			3
Turn Type	Perm						Perm			Prot		custom
Protected Phases		2			6			8		7		
Permitted Phases	2						8				4	4
Actuated Green, G (s)	49.0	49.0			49.0		21.0	21.0		11.0	35.0	35.0
Effective Green, g (s)	48.0	48.0			48.0		20.0	20.0		10.0	34.0	34.0
Actuated g/C Ratio	0.53	0.53			0.53		0.22	0.22		0.11	0.38	0.38
Clearance Time (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Vehicle Extension (s)	5.0	5.0			5.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	105	2405			2333		212	301		176	630	416
v/s Ratio Prot		0.36			0.33			c0.14		c0.08		
v/s Ratio Perm	c0.52						0.12				0.04	0.14
v/c Ratio	0.97	0.68			0.62		0.53	0.61		0.74	0.11	0.38
Uniform Delay, d1	20.3	15.3			14.6		30.9	31.5		38.7	18.2	20.3
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	80.4	1.5			1.2		9.3	8.8		14.9	0.4	2.6
Delay (s)	100.7	16.9			15.9		40.2	40.3		53.7	18.6	22.9
Level of Service	F	B			B		D	D		D	B	C
Approach Delay (s)		21.8			15.9			40.3			33.2	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBR2
Lane Configurations									
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0
Lane Util. Factor		1.00	0.91		1.00	0.91			1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.95			1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00			1.00
Frt		1.00	0.99		1.00	0.98			0.86
Flt Protected		0.95	1.00		0.95	1.00			1.00
Satd. Flow (prot)		1583	4392		1583	4228			1442
Flt Permitted		0.95	1.00		0.95	1.00			1.00
Satd. Flow (perm)		1583	4392		1583	4228			1442
Volume (vph)	220	232	1537	121	184	980	110	69	146
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	227	239	1585	125	190	1010	113	71	151
RTOR Reduction (vph)	0	0	8	0	0	7	0	0	131
Lane Group Flow (vph)	0	466	1702	0	190	1187	0	0	20
Confl. Peds. (#/hr)	99	154		137	137		99	154	155
Confl. Bikes (#/hr)				6			7	10	2
Turn Type	Prot	Prot			Prot				custom
Protected Phases	1	1	2		8	6			1
Permitted Phases									
Actuated Green, G (s)		14.0	58.8		18.2	80.0			14.0
Effective Green, g (s)		13.0	57.8		17.2	79.0			13.0
Actuated g/C Ratio		0.13	0.58		0.17	0.79			0.13
Clearance Time (s)		3.0	3.0		3.0	3.0			3.0
Vehicle Extension (s)		2.5	5.0		3.0	5.0			2.5
Lane Grp Cap (vph)		206	2539		272	3340			187
v/s Ratio Prot		c0.29	c0.39		c0.12	0.28			0.01
v/s Ratio Perm									
v/c Ratio		2.26	0.67		0.70	0.36			0.10
Uniform Delay, d1		43.5	14.5		39.0	3.1			38.4
Progression Factor		1.15	1.62		1.00	1.00			1.00
Incremental Delay, d2		575.6	0.7		7.6	0.3			0.2
Delay (s)		625.6	24.3		46.6	3.4			38.5
Level of Service		F	C		D	A			D
Approach Delay (s)			153.1			9.3			
Approach LOS			F			A			

Intersection Summary			
HCM Average Control Delay	94.8	HCM Level of Service	F
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

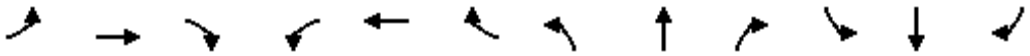


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.86	0.86		1.00	0.91			0.95	1.00		0.86	0.86
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	961	3014		1118	3208			2235	1000		3003	860
Flt Permitted	0.95	0.71		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	961	2144		1118	3208			2235	1000		3003	860
Volume (vph)	363	1157	24	112	1183	10	0	768	55	0	1003	635
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	412	1315	27	127	1344	11	0	873	62	0	1140	722
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	43	0	8	330
Lane Group Flow (vph)	290	1462	0	127	1354	0	0	873	19	0	1218	306
Turn Type	Prot			Prot					Perm			Over
Protected Phases	7	4		3	8			2			6	7
Permitted Phases									2			
Actuated Green, G (s)	15.9	41.4		14.9	40.4			29.4	29.4		29.4	15.9
Effective Green, g (s)	17.0	42.0		16.0	41.0			30.0	30.0		30.0	17.0
Actuated g/C Ratio	0.17	0.42		0.16	0.41			0.30	0.30		0.30	0.17
Clearance Time (s)	5.1	4.6		5.1	4.6			4.6	4.6		4.6	5.1
Vehicle Extension (s)	3.0	3.0		5.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	163	1048		179	1315			671	300		901	146
v/s Ratio Prot	0.30	0.24		0.11	c0.42			0.39			c0.41	c0.36
v/s Ratio Perm		c0.35							0.02			
v/c Ratio	1.78	1.40		0.71	1.03			1.30	0.06		1.35	2.10
Uniform Delay, d1	41.5	29.0		39.8	29.5			35.0	25.0		35.0	41.5
Progression Factor	1.00	1.00		1.21	0.37			1.00	1.00		1.00	1.00
Incremental Delay, d2	374.2	183.7		11.4	29.5			146.2	0.4		165.8	517.2
Delay (s)	415.7	212.7		59.7	40.3			181.2	25.4		200.8	558.7
Level of Service	F	F		E	D			F	C		F	F
Approach Delay (s)		246.3			42.0			170.9			323.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	208.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	120.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frt		1.00		1.00	1.00		1.00	1.00	0.85	1.00	0.95	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3187		1118	3202		1118	2235	1000	1118	2122	
Flt Permitted		0.70		0.95	1.00		0.24	1.00	1.00	0.18	1.00	
Satd. Flow (perm)		2249		1118	3202		282	2235	1000	213	2122	
Volume (vph)	170	1091	10	231	983	21	10	725	334	28	419	214
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	173	1113	10	236	1003	21	10	740	341	29	428	218
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	235	0	64	0
Lane Group Flow (vph)	0	1295	0	236	1022	0	10	740	106	29	582	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Actuated Green, G (s)		41.4		14.9	40.4		29.4	29.4	29.4	29.4	29.4	
Effective Green, g (s)		42.0		16.0	41.0		30.0	30.0	30.0	30.0	30.0	
Actuated g/C Ratio		0.42		0.16	0.41		0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)		4.6		5.1	4.6		4.6	4.6	4.6	4.6	4.6	
Vehicle Extension (s)		3.0		5.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1104		179	1313		85	671	300	64	637	
v/s Ratio Prot		c0.20		c0.21	0.32			c0.33			0.27	
v/s Ratio Perm		c0.29					0.04		0.11	0.14		
v/c Ratio		1.17		1.32	0.78		0.12	1.10	0.35	0.45	0.91	
Uniform Delay, d1		29.0		42.0	25.6		25.4	35.0	27.4	28.4	33.7	
Progression Factor		0.65		0.94	1.52		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		79.0		176.2	4.5		2.8	66.3	3.2	21.4	19.7	
Delay (s)		97.7		215.7	43.3		28.2	101.3	30.6	49.8	53.5	
Level of Service		F		F	D		C	F	C	D	D	
Approach Delay (s)		97.7			75.6			78.6			53.3	
Approach LOS		F			E			E			D	

Intersection Summary			
HCM Average Control Delay	79.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	116.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1583	4467		1583	4541		1583	1667	1417	1583	2996	
Flt Permitted	0.09	1.00		0.10	1.00		0.12	1.00	1.00	0.13	1.00	
Satd. Flow (perm)	156	4467		171	4541		206	1667	1417	218	2996	
Volume (vph)	100	1173	163	69	2640	36	137	537	93	51	606	341
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	1235	172	73	2779	38	144	565	98	54	638	359
RTOR Reduction (vph)	0	18	0	0	1	0	0	0	66	0	77	0
Lane Group Flow (vph)	105	1389	0	73	2816	0	144	565	32	54	920	0
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	50.6	43.8		48.2	42.6		40.4	33.4	33.4	36.8	31.6	
Effective Green, g (s)	48.6	42.8		46.2	41.6		38.4	32.4	32.4	34.8	30.6	
Actuated g/C Ratio	0.49	0.43		0.46	0.42		0.38	0.32	0.32	0.35	0.31	
Clearance Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	159	1912		144	1889		162	540	459	133	917	
v/s Ratio Prot	c0.04	0.31		0.02	c0.62		c0.05	c0.34		0.02	0.31	
v/s Ratio Perm	0.28			0.21			0.29		0.02	0.12		
v/c Ratio	0.66	0.73		0.51	1.49		0.89	1.05	0.07	0.41	1.00	
Uniform Delay, d1	23.3	23.7		17.3	29.2		25.4	33.8	23.4	25.3	34.7	
Progression Factor	0.78	1.08		2.14	1.80		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.6	2.1		0.1	221.1		39.1	51.4	0.3	0.7	30.5	
Delay (s)	24.7	27.8		37.0	273.6		64.5	85.2	23.7	26.0	65.2	
Level of Service	C	C		D	F		E	F	C	C	E	
Approach Delay (s)		27.5			267.6			74.0			63.2	
Approach LOS		C			F			E			E	

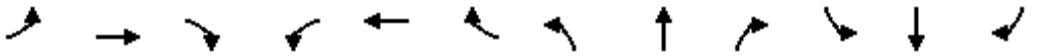
Intersection Summary			
HCM Average Control Delay	150.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1118	2222		1118	2232		1118	2177		1118	2231	
Flt Permitted	0.07	1.00		0.09	1.00		0.28	1.00		0.66	1.00	
Satd. Flow (perm)	77	2222		106	2232		331	2177		781	2231	
Volume (vph)	27	1549	66	53	2105	22	10	112	23	114	492	7
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	28	1597	68	55	2170	23	10	115	24	118	507	7
RTOR Reduction (vph)	0	3	0	0	1	0	0	18	0	0	1	0
Lane Group Flow (vph)	28	1662	0	55	2192	0	10	121	0	118	513	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	60.5	60.5		60.5	60.5		20.8	20.8		20.8	20.8	
Effective Green, g (s)	61.0	61.0		61.0	61.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.23	0.23		0.23	0.23	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	52	1506		72	1513		77	508		182	521	
v/s Ratio Prot		0.75			c0.98			0.06			c0.23	
v/s Ratio Perm	0.36			0.52			0.03			0.15		
v/c Ratio	0.54	1.10		0.76	1.45		0.13	0.24		0.65	0.99	
Uniform Delay, d1	7.4	14.5		9.7	14.5		27.3	28.0		31.2	34.3	
Progression Factor	0.35	0.38		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	47.7		53.7	205.7		3.5	1.1		16.5	35.9	
Delay (s)	6.2	53.2		63.4	220.2		30.7	29.1		47.7	70.3	
Level of Service	A	D		E	F		C	C		D	E	
Approach Delay (s)		52.4			216.4			29.2			66.1	
Approach LOS		D			F			C			E	

Intersection Summary			
HCM Average Control Delay	131.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	129.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

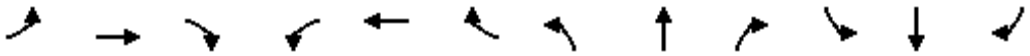
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		0.95						0.95			0.95	
Frpb, ped/bikes		1.00						1.00			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		0.98						1.00			0.99	
Satd. Flow (prot)		3031						3053			3145	
Flt Permitted		0.98						1.00			0.90	
Satd. Flow (perm)		3031						3053			2858	
Volume (vph)	174	212	17	0	0	0	0	98	26	38	274	0
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	226	275	22	0	0	0	0	127	34	49	356	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	520	0	0	0	0	0	136	0	0	405	0
Confl. Peds. (#/hr)	28		18	18		28	6		7	7		6
Confl. Bikes (#/hr)			1						1			1
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		37.0						17.0			17.0	
Effective Green, g (s)		36.0						16.0			16.0	
Actuated g/C Ratio		0.60						0.27			0.27	
Clearance Time (s)		3.0						3.0			3.0	
Vehicle Extension (s)		5.0						3.0			3.0	
Lane Grp Cap (vph)		1819						814			762	
v/s Ratio Prot								0.04				
v/s Ratio Perm		0.17									c0.14	
v/c Ratio		0.29						0.17			0.53	
Uniform Delay, d1		5.8						16.9			18.8	
Progression Factor		1.15						1.00			1.00	
Incremental Delay, d2		0.3						0.4			2.6	
Delay (s)		6.9						17.3			21.4	
Level of Service		A						B			C	
Approach Delay (s)		6.9			0.0			17.3			21.4	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.1%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0		4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91				1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99				0.97		1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00		0.98	1.00
Frt	1.00	1.00		1.00	0.98				0.86		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00		0.95	1.00
Satd. Flow (prot)	1583	4527		1583	4397				1396		1562	1371
Flt Permitted	0.95	1.00		0.95	1.00				1.00		0.95	1.00
Satd. Flow (perm)	1583	4527		1583	4397				1396		1562	1371
Volume (vph)	48	1341	26	116	2413	463	0	0	45	135	7	166
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	50	1397	27	121	2514	482	0	0	47	141	7	173
RTOR Reduction (vph)	0	2	0	0	23	0	0	0	36	0	0	133
Lane Group Flow (vph)	50	1422	0	121	2973	0	0	0	11	0	148	40
Confl. Peds. (#/hr)	18		42	42		18	15		14	14		15
Confl. Bikes (#/hr)			2			1			1			
Turn Type	Prot			Prot					custom	Perm		Perm
Protected Phases	5	2		1	6						4	
Permitted Phases									8	4		4
Actuated Green, G (s)	5.4	55.7		11.3	61.6				24.0		24.0	24.0
Effective Green, g (s)	4.4	54.7		10.3	60.6				23.0		23.0	23.0
Actuated g/C Ratio	0.04	0.55		0.10	0.61				0.23		0.23	0.23
Clearance Time (s)	3.0	3.0		3.0	3.0				3.0		3.0	3.0
Vehicle Extension (s)	2.0	5.0		2.0	5.0				3.0		3.0	3.0
Lane Grp Cap (vph)	70	2476		163	2665				321		359	315
v/s Ratio Prot	0.03	0.31		c0.08	c0.68							
v/s Ratio Perm									0.01		0.09	0.03
v/c Ratio	0.71	0.57		0.74	1.12				0.03		0.41	0.13
Uniform Delay, d1	47.2	15.0		43.6	19.7				29.9		32.8	30.5
Progression Factor	1.00	1.00		0.70	1.88				1.00		1.00	1.00
Incremental Delay, d2	24.8	1.0		1.5	52.5				0.2		3.5	0.8
Delay (s)	72.0	15.9		32.0	89.6				30.1		36.2	31.4
Level of Service	E	B		C	F				C		D	C
Approach Delay (s)		17.8			87.4			30.1			33.6	
Approach LOS		B			F			C			C	

Intersection Summary			
HCM Average Control Delay	62.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1118	2230		1118	2233		1118	2216		1118	2203	
Flt Permitted	0.07	1.00		0.07	1.00		0.15	1.00		0.29	1.00	
Satd. Flow (perm)	84	2230		84	2233		181	2216		343	2203	
Volume (vph)	32	1650	25	229	1970	15	26	523	32	26	753	81
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	33	1684	26	234	2010	15	27	534	33	27	768	83
RTOR Reduction (vph)	0	1	0	0	1	0	0	5	0	0	9	0
Lane Group Flow (vph)	33	1709	0	234	2024	0	27	562	0	27	842	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	55.5	55.5		55.5	55.5		25.8	25.8		25.8	25.8	
Effective Green, g (s)	56.0	56.0		56.0	56.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.29	0.29		0.29	0.29	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	52	1388		52	1389		52	640		99	636	
v/s Ratio Prot		0.77			0.91			0.25			c0.38	
v/s Ratio Perm	0.39			c2.78			0.15			0.08		
v/c Ratio	0.63	1.23		4.50	1.46		0.52	0.88		0.27	1.32	
Uniform Delay, d1	10.6	17.0		17.0	17.0		26.8	30.5		24.7	32.0	
Progression Factor	1.00	1.00		0.59	0.59		0.43	0.35		1.00	1.00	
Incremental Delay, d2	46.8	110.5		1579.0	206.2		13.2	6.8		6.7	156.4	
Delay (s)	57.4	127.5		1589.0	216.2		24.6	17.5		31.4	188.4	
Level of Service	E	F		F	F		C	B		C	F	
Approach Delay (s)		126.2			358.4			17.9			183.5	
Approach LOS		F			F			B			F	

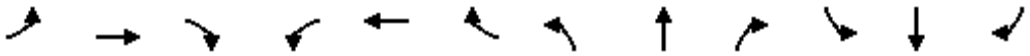
Intersection Summary			
HCM Average Control Delay	219.5	HCM Level of Service	F
HCM Volume to Capacity ratio	3.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	142.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00		0.95	
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85		0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1118	2205		1118	2231		1118	2235	1000		2211	
Flt Permitted	0.07	1.00		0.23	1.00		0.15	1.00	1.00		1.00	
Satd. Flow (perm)	84	2205		276	2231		181	2235	1000		2211	
Volume (vph)	59	821	80	222	1756	24	65	498	98	0	914	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	66	912	89	247	1951	27	72	553	109	0	1016	78
RTOR Reduction (vph)	0	3	0	0	1	0	0	0	78	0	6	0
Lane Group Flow (vph)	66	998	0	247	1977	0	72	553	31	0	1088	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8			
Actuated Green, G (s)	55.5	55.5		55.5	55.5		25.8	25.8	25.8		25.8	
Effective Green, g (s)	56.0	56.0		56.0	56.0		26.0	26.0	26.0		26.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.29	0.29	0.29		0.29	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2	4.2		4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	52	1372		172	1388		52	646	289		639	
v/s Ratio Prot		0.45			0.89			0.25			c0.49	
v/s Ratio Perm	0.79			c0.89			0.40		0.03			
v/c Ratio	1.27	0.73		1.44	1.42		1.38	0.86	0.11		1.70	
Uniform Delay, d1	17.0	11.7		17.0	17.0		32.0	30.2	23.5		32.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		0.61	
Incremental Delay, d2	213.7	3.4		226.1	195.2		257.0	13.7	0.8		316.5	
Delay (s)	230.7	15.1		243.1	212.2		289.0	43.9	24.3		335.9	
Level of Service	F	B		F	F		F	D	C		F	
Approach Delay (s)		28.5			215.6			65.0			335.9	
Approach LOS		C			F			E			F	

Intersection Summary			
HCM Average Control Delay	180.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	149.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		0.95						0.95			0.95	
Frpb, ped/bikes		0.99						0.98			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.93						0.96			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		2862						2980			3144	
Flt Permitted		0.99						1.00			0.65	
Satd. Flow (perm)		2862						2980			2064	
Volume (vph)	35	114	139	0	0	0	0	763	234	86	700	0
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	38	125	153	0	0	0	0	838	257	95	769	0
RTOR Reduction (vph)	0	58	0	0	0	0	0	48	0	0	0	0
Lane Group Flow (vph)	0	258	0	0	0	0	0	1047	0	0	864	0
Confl. Peds. (#/hr)	123		3	3		123	1		108	108		1
Confl. Bikes (#/hr)						6			4			2
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		27.0						27.0			27.0	
Effective Green, g (s)		26.0						26.0			26.0	
Actuated g/C Ratio		0.43						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1240						1291			894	
v/s Ratio Prot								0.35				
v/s Ratio Perm		0.09									c0.42	
v/c Ratio		0.21						0.81			0.97	
Uniform Delay, d1		10.6						14.9			16.6	
Progression Factor		0.59						1.00			1.00	
Incremental Delay, d2		0.4						5.6			23.0	
Delay (s)		6.6						20.5			39.6	
Level of Service		A						C			D	
Approach Delay (s)		6.6			0.0			20.5			39.6	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.3%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00		0.95	
Frpb, ped/bikes	1.00	0.97		1.00	0.99		1.00	1.00	0.86		0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1583	4332		1583	4470		1583	3167	1219		2987	
Flt Permitted	0.10	1.00		0.09	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (perm)	159	4332		145	4470		1583	3167	1219		2987	
Volume (vph)	61	1226	202	334	2104	91	296	884	102	0	774	193
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	64	1277	210	348	2192	95	308	921	106	0	806	201
RTOR Reduction (vph)	0	23	0	0	4	0	0	0	68	0	22	0
Lane Group Flow (vph)	64	1464	0	348	2283	0	308	921	38	0	985	0
Confl. Peds. (#/hr)	202		139	139		202	96		97	97		96
Confl. Bikes (#/hr)						3			1			1
Turn Type	pm+pt			pm+pt			Prot		Perm			
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2			6					8			
Actuated Green, G (s)	48.4	43.0		56.0	47.6		9.9	35.9	35.9		22.9	
Effective Green, g (s)	46.4	42.0		55.0	46.6		9.0	35.0	35.0		22.0	
Actuated g/C Ratio	0.47	0.43		0.56	0.48		0.09	0.36	0.36		0.22	
Clearance Time (s)	3.0	3.0		3.0	3.0		3.1	3.1	3.1		3.1	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	139	1857		213	2126		145	1131	435		671	
v/s Ratio Prot	0.02	0.34		c0.15	0.51		c0.19	0.29			c0.33	
v/s Ratio Perm	0.20			c0.77					0.03			
v/c Ratio	0.46	0.79		1.63	1.07		2.12	0.81	0.09		1.47	
Uniform Delay, d1	21.2	24.2		25.9	25.7		44.5	28.6	20.9		38.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.9	3.5		305.5	42.8		528.3	6.5	0.4		218.4	
Delay (s)	22.1	27.7		331.4	68.5		572.8	35.0	21.3		256.4	
Level of Service	C	C		F	E		F	D	C		F	
Approach Delay (s)		27.4			103.2			158.0			256.4	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM Average Control Delay	120.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.61		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	116.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95		1.00	0.95		1.00	0.95	
Frt		0.95			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2986			3063		1583	3153		1583	3132	
Flt Permitted		0.85			0.76		0.15	1.00		0.12	1.00	
Satd. Flow (perm)		2554			2373		245	3153		201	3132	
Volume (vph)	29	107	69	196	294	55	113	1221	36	44	997	78
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	30	110	71	202	303	57	116	1259	37	45	1028	80
RTOR Reduction (vph)	0	49	0	0	10	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	162	0	0	552	0	116	1294	0	45	1102	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		29.0			29.0		54.6	48.3		49.4	45.7	
Effective Green, g (s)		28.0			28.0		52.6	47.3		47.4	44.7	
Actuated g/C Ratio		0.31			0.31		0.58	0.53		0.53	0.50	
Clearance Time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Vehicle Extension (s)		3.0			3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		795			738		222	1657		147	1556	
v/s Ratio Prot							c0.03	c0.41		0.01	0.35	
v/s Ratio Perm		0.06			c0.23		0.27			0.15		
v/c Ratio		0.20			0.75		0.52	0.78		0.31	0.71	
Uniform Delay, d1		22.8			27.8		11.5	17.2		12.8	17.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			4.2		1.0	3.7		0.4	2.8	
Delay (s)		23.4			32.0		12.6	20.9		13.2	20.3	
Level of Service		C			C		B	C		B	C	
Approach Delay (s)		23.4			32.0			20.2			20.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.6%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95			0.95	
Frt	1.00	0.99		1.00	1.00		1.00	0.99			0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1583	4525		1583	4550		1583	3134			3059	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1583	4525		1583	4550		1583	3134			3059	
Volume (vph)	36	1856	71	10	3178	0	40	688	51	0	420	123
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	36	1875	72	10	3210	0	40	695	52	0	424	124
RTOR Reduction (vph)	0	4	0	0	0	0	0	6	0	0	30	0
Lane Group Flow (vph)	36	1943	0	10	3210	0	40	741	0	0	518	0
Turn Type	Prot			Prot			Split					
Protected Phases	1!	2!		5!	6!		8	8			7	
Permitted Phases												
Actuated Green, G (s)	5.3	33.7		4.8	33.2		14.0	14.0			22.0	
Effective Green, g (s)	4.8	33.2		4.8	33.2		14.0	14.0			22.0	
Actuated g/C Ratio	0.05	0.37		0.05	0.37		0.16	0.16			0.24	
Clearance Time (s)	3.5	3.5		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	84	1669		84	1678		246	488			748	
v/s Ratio Prot	c0.02	0.43		0.01	c0.71		0.03	c0.24			c0.17	
v/s Ratio Perm												
v/c Ratio	0.43	1.16		0.12	1.91		0.16	1.52			0.69	
Uniform Delay, d1	41.3	28.4		40.6	28.4		32.9	38.0			30.9	
Progression Factor	1.22	0.99		1.52	0.38		1.00	1.00			1.00	
Incremental Delay, d2	0.3	74.4		0.1	411.0		0.3	243.7			5.2	
Delay (s)	50.9	102.5		61.7	421.8		33.2	281.7			36.1	
Level of Service	D	F		E	F		C	F			D	
Approach Delay (s)		101.5			420.7			269.1			36.1	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM Average Control Delay	273.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

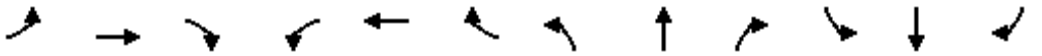
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt		0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4521		1583	4518		1583	3138		1583	3167	
Flt Permitted		1.00		0.95	1.00		0.33	1.00		0.18	1.00	
Satd. Flow (perm)		4521		1583	4518		544	3138		303	3167	
Volume (vph)	0	1812	81	26	2889	142	262	933	60	62	453	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1907	85	27	3041	149	276	982	63	65	477	0
RTOR Reduction (vph)	0	5	0	0	5	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1987	0	27	3185	0	276	1040	0	65	477	0
Turn Type				Prot			Perm			Perm		
Protected Phases		2!		5!	6			7			7	
Permitted Phases							7			7		
Actuated Green, G (s)		33.7		4.8	33.2		22.0	22.0		22.0	22.0	
Effective Green, g (s)		33.2		4.8	33.2		22.0	22.0		22.0	22.0	
Actuated g/C Ratio		0.37		0.05	0.37		0.24	0.24		0.24	0.24	
Clearance Time (s)		3.5		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1668		84	1667		133	767		74	774	
v/s Ratio Prot		0.44		c0.02	c0.70			0.33			0.15	
v/s Ratio Perm							c0.51			0.21		
v/c Ratio		1.19		0.32	1.91		2.08	1.36		0.88	0.62	
Uniform Delay, d1		28.4		41.0	28.4		34.0	34.0		32.7	30.2	
Progression Factor		0.28		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		86.6		2.2	412.0		508.7	168.5		74.4	3.7	
Delay (s)		94.7		43.2	440.4		542.7	202.5		107.1	33.9	
Level of Service		F		D	F		F	F		F	C	
Approach Delay (s)		94.7			437.1			273.6			42.7	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM Average Control Delay	279.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.95						0.95		1.00	0.95	
Frpb, ped/bikes		1.00						0.97		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.95	1.00	
Frt		1.00						0.94		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		3125						2890		1507	3167	
Flt Permitted		1.00						1.00		0.64	1.00	
Satd. Flow (perm)		3125						2890		1013	3167	
Volume (vph)	16	243	5	0	0	0	0	93	62	59	427	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	19	283	6	0	0	0	0	108	72	69	497	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	53	0	0	0	0
Lane Group Flow (vph)	0	306	0	0	0	0	0	127	0	69	497	0
Confl. Peds. (#/hr)	51		52	52		51	5		55	55		
Confl. Bikes (#/hr)						3						5
Turn Type	Perm									Perm		
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		17.0						17.0		17.0	17.0	
Effective Green, g (s)		16.0						16.0		16.0	16.0	
Actuated g/C Ratio		0.27						0.27		0.27	0.27	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Vehicle Extension (s)		5.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		833						771		270	845	
v/s Ratio Prot								0.04			c0.16	
v/s Ratio Perm		0.10								0.07		
v/c Ratio		0.37						0.16		0.26	0.59	
Uniform Delay, d1		17.9						16.9		17.3	19.1	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		1.2						0.5		2.3	3.0	
Delay (s)		19.1						17.3		19.6	22.1	
Level of Service		B						B		B	C	
Approach Delay (s)		19.1			0.0			17.3			21.8	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

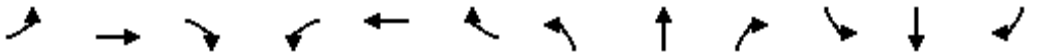


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.90		1.00	1.00	0.78
Flpb, ped/bikes	1.00	1.00			1.00		0.84	1.00		1.00	1.00	1.00
Frt	1.00	1.00			1.00		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1583	4525			4511		1334	1420		1583	1667	1102
Flt Permitted	0.08	1.00			1.00		0.62	1.00		0.95	1.00	1.00
Satd. Flow (perm)	132	4525			4511		872	1420		1583	1667	1102
Volume (vph)	39	1266	14	0	2457	47	105	76	42	90	211	110
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	41	1319	15	0	2559	49	109	79	44	94	220	115
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	41	1333	0	0	2606	0	109	123	0	94	220	115
Confl. Peds. (#/hr)	244		131	131		244	166		211	211		166
Confl. Bikes (#/hr)			3			5			2			3
Turn Type	Perm						Perm			Prot		custom
Protected Phases		2			6			8		7		
Permitted Phases	2						8				4	4
Actuated Green, G (s)	51.4	51.4			51.4		21.0	21.0		8.6	32.6	32.6
Effective Green, g (s)	50.4	50.4			50.4		20.0	20.0		7.6	31.6	31.6
Actuated g/C Ratio	0.56	0.56			0.56		0.22	0.22		0.08	0.35	0.35
Clearance Time (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Vehicle Extension (s)	5.0	5.0			5.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	74	2534			2526		194	316		134	585	387
v/s Ratio Prot		0.29			c0.58			0.09		c0.06		
v/s Ratio Perm	0.31						c0.13				0.13	0.10
v/c Ratio	0.55	0.53			1.03		0.56	0.39		0.70	0.38	0.30
Uniform Delay, d1	12.6	12.3			19.8		31.1	29.8		40.1	21.8	21.2
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	26.7	0.8			26.6		11.3	3.6		15.3	1.8	2.0
Delay (s)	39.3	13.1			46.4		42.4	33.4		55.4	23.7	23.1
Level of Service	D	B			D		D	C		E	C	C
Approach Delay (s)		13.9			46.4			37.6			30.5	
Approach LOS		B			D			D			C	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBR2
Lane Configurations									
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0
Lane Util. Factor		1.00	0.91		1.00	0.91			1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.99			1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00			1.00
Frt		1.00	1.00		1.00	0.99			0.86
Flt Protected		0.95	1.00		0.95	1.00			1.00
Satd. Flow (prot)		1583	4521		1583	4482			1442
Flt Permitted		0.95	1.00		0.95	1.00			1.00
Satd. Flow (perm)		1583	4521		1583	4482			1442
Volume (vph)	343	251	1318	36	561	1905	42	41	32
Peak-hour factor, PHF	0.92	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92
Adj. Flow (vph)	373	261	1373	38	584	1984	44	43	35
RTOR Reduction (vph)	0	0	3	0	0	2	0	0	31
Lane Group Flow (vph)	0	634	1408	0	584	2069	0	0	4
Confl. Peds. (#/hr)	63	81		28	28		63	81	35
Confl. Bikes (#/hr)				5			9	10	1
Turn Type	Prot	Prot			Prot				custom
Protected Phases	1	1	2		8	6			1
Permitted Phases									
Actuated Green, G (s)		13.0	52.0		26.0	81.0			13.0
Effective Green, g (s)		12.0	51.0		25.0	80.0			12.0
Actuated g/C Ratio		0.12	0.51		0.25	0.80			0.12
Clearance Time (s)		3.0	3.0		3.0	3.0			3.0
Vehicle Extension (s)		2.5	5.0		3.0	5.0			2.5
Lane Grp Cap (vph)		190	2306		396	3586			173
v/s Ratio Prot		c0.40	c0.31		c0.37	0.46			0.00
v/s Ratio Perm									
v/c Ratio		3.34	0.61		1.47	0.58			0.02
Uniform Delay, d1		44.0	17.4		37.5	3.7			38.8
Progression Factor		1.25	1.96		1.00	1.00			1.00
Incremental Delay, d2		1052.8	0.1		226.9	0.7			0.0
Delay (s)		1107.8	34.3		264.4	4.4			38.9
Level of Service		F	C		F	A			D
Approach Delay (s)			367.1			61.6			
Approach LOS			F			E			

Intersection Summary			
HCM Average Control Delay	193.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

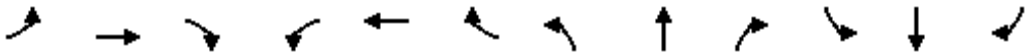


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.86	0.86		1.00	0.91			0.95	1.00		0.86	0.86
Frt	1.00	1.00		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	961	3017		1118	3198			2235	1000		3035	860
Flt Permitted	0.95	0.68		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	961	2072		1118	3198			2235	1000		3035	860
Volume (vph)	719	1866	16	253	1830	53	0	1011	142	0	1709	788
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	749	1944	17	264	1906	55	0	1053	148	0	1780	821
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	105	0	0	319
Lane Group Flow (vph)	538	2171	0	264	1958	0	0	1053	43	0	1780	502
Turn Type	Prot			Prot					Perm			Over
Protected Phases	7	4		3	8			2			6	7
Permitted Phases									2			
Actuated Green, G (s)	20.9	36.4		20.9	36.4			28.4	28.4		28.4	20.9
Effective Green, g (s)	22.0	37.0		22.0	37.0			29.0	29.0		29.0	22.0
Actuated g/C Ratio	0.22	0.37		0.22	0.37			0.29	0.29		0.29	0.22
Clearance Time (s)	5.1	4.6		5.1	4.6			4.6	4.6		4.6	5.1
Vehicle Extension (s)	3.0	3.0		5.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	211	975		246	1183			648	290		880	189
v/s Ratio Prot	0.56	0.49		0.24	c0.61			0.47			c0.59	c0.58
v/s Ratio Perm		c0.33							0.04			
v/c Ratio	2.55	2.23		1.07	1.65			1.62	0.15		2.02	2.66
Uniform Delay, d1	39.0	31.5		39.0	31.5			35.5	26.3		35.5	39.0
Progression Factor	1.00	1.00		1.05	0.58			1.00	1.00		1.00	1.00
Incremental Delay, d2	711.2	555.5		40.7	295.1			288.3	1.1		464.2	760.2
Delay (s)	750.2	587.0		81.5	313.2			323.8	27.4		499.7	799.2
Level of Service	F	F		F	F			F	C		F	F
Approach Delay (s)		619.4			285.7			287.3			594.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	481.3	HCM Level of Service	F
HCM Volume to Capacity ratio	2.19		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	190.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frt		0.99		1.00	1.00		1.00	1.00	0.85	1.00	0.95	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3152		1118	3208		1118	2235	1000	1118	2133	
Flt Permitted		0.72		0.95	1.00		0.14	1.00	1.00	0.31	1.00	
Satd. Flow (perm)		2293		1118	3208		162	2235	1000	370	2133	
Volume (vph)	493	1327	75	254	1491	13	67	503	281	27	922	403
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	519	1397	79	267	1569	14	71	529	296	28	971	424
RTOR Reduction (vph)	0	4	0	0	1	0	0	0	210	0	49	0
Lane Group Flow (vph)	0	1991	0	267	1582	0	71	529	86	28	1346	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Actuated Green, G (s)		36.4		20.9	36.4		28.4	28.4	28.4	28.4	28.4	
Effective Green, g (s)		37.0		22.0	37.0		29.0	29.0	29.0	29.0	29.0	
Actuated g/C Ratio		0.37		0.22	0.37		0.29	0.29	0.29	0.29	0.29	
Clearance Time (s)		4.6		5.1	4.6		4.6	4.6	4.6	4.6	4.6	
Vehicle Extension (s)		3.0		5.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1037		246	1187		47	648	290	107	619	
v/s Ratio Prot		c0.42		0.24	c0.49			0.24			c0.63	
v/s Ratio Perm		c0.29					0.44		0.09	0.08		
v/c Ratio		1.92		1.09	1.33		1.51	0.82	0.30	0.26	2.17	
Uniform Delay, d1		31.5		39.0	31.5		35.5	33.0	27.6	27.3	35.5	
Progression Factor		0.61		0.93	1.39		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		414.1		76.7	154.7		313.0	10.9	2.6	5.9	533.9	
Delay (s)		433.2		112.8	198.4		348.5	43.9	30.2	33.1	569.4	
Level of Service		F		F	F		F	D	C	C	F	
Approach Delay (s)		433.2			186.1			63.5			558.8	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	334.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	191.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99			0.99		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1583	4518			4522		1583	1667	1417	1583	3077	
Flt Permitted	0.09	1.00			1.00		0.22	1.00	1.00	0.35	1.00	
Satd. Flow (perm)	150	4518			4522		371	1667	1417	576	3077	
Volume (vph)	242	2607	128	0	1842	79	115	390	19	14	496	116
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	257	2773	136	0	1960	84	122	415	20	15	528	123
RTOR Reduction (vph)	0	4	0	0	5	0	0	0	13	0	20	0
Lane Group Flow (vph)	257	2905	0	0	2039	0	122	415	7	15	631	0
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	51.5	51.5			41.5		42.5	37.2	37.2	35.0	32.7	
Effective Green, g (s)	50.5	50.5			40.5		41.5	36.2	36.2	33.0	31.7	
Actuated g/C Ratio	0.50	0.50			0.40		0.42	0.36	0.36	0.33	0.32	
Clearance Time (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Vehicle Extension (s)	2.0	5.0			5.0		2.0	3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	162	2282			1831		224	603	513	203	975	
v/s Ratio Prot	c0.10	0.64			0.45		c0.03	c0.25		0.00	0.21	
v/s Ratio Perm	c0.71						0.19		0.01	0.02		
v/c Ratio	1.59	1.27			1.11		0.54	0.69	0.01	0.07	0.65	
Uniform Delay, d1	25.0	24.8			29.8		20.1	27.1	20.5	23.2	29.3	
Progression Factor	0.99	1.11			1.79		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	285.7	125.6			55.8		1.5	6.3	0.1	0.1	3.3	
Delay (s)	310.4	153.1			109.0		21.6	33.4	20.5	23.3	32.7	
Level of Service	F	F			F		C	C	C	C	C	
Approach Delay (s)		165.9			109.0			30.4			32.5	
Approach LOS		F			F			C			C	

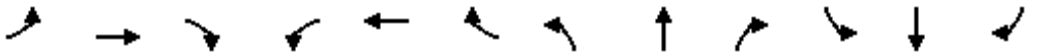
Intersection Summary			
HCM Average Control Delay	122.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	0.99		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1118	2227		1118	2223		1118	2199		1118	2231	
Flt Permitted	0.07	1.00		0.07	1.00		0.40	1.00		0.25	1.00	
Satd. Flow (perm)	77	2227		77	2223		470	2199		293	2231	
Volume (vph)	13	2317	58	92	1890	72	91	477	58	100	374	5
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	13	2389	60	95	1948	74	94	492	60	103	386	5
RTOR Reduction (vph)	0	2	0	0	3	0	0	6	0	0	1	0
Lane Group Flow (vph)	13	2447	0	95	2019	0	94	546	0	103	390	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	60.5	60.5		60.5	60.5		20.8	20.8		20.8	20.8	
Effective Green, g (s)	61.0	61.0		61.0	61.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.23	0.23		0.23	0.23	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	52	1509		52	1507		110	513		68	521	
v/s Ratio Prot		1.10			0.91			0.25			0.17	
v/s Ratio Perm	0.17			c1.23			0.20			c0.35		
v/c Ratio	0.25	1.62		1.83	1.34		0.85	1.06		1.51	0.75	
Uniform Delay, d1	5.6	14.5		14.5	14.5		33.0	34.5		34.5	32.1	
Progression Factor	0.47	0.38		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	280.0		437.2	157.5		53.1	57.9		293.2	9.5	
Delay (s)	3.7	285.5		451.7	172.0		86.1	92.4		327.7	41.6	
Level of Service	A	F		F	F		F	F		F	D	
Approach Delay (s)		284.0			184.5			91.5			101.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	209.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	158.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		0.95						0.95			0.95	
Frpb, ped/bikes		0.99						0.99			1.00	
Flpb, ped/bikes		1.00						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3047						3075			3130	
Flt Permitted		0.99						1.00			0.83	
Satd. Flow (perm)		3047						3075			2602	
Volume (vph)	257	518	76	0	0	0	0	343	51	71	438	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	563	83	0	0	0	0	373	55	77	476	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	0	918	0	0	0	0	0	409	0	0	553	0
Confl. Peds. (#/hr)	5		38				63		59	59		63
Confl. Bikes (#/hr)			5						1			1
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		37.0						17.0			17.0	
Effective Green, g (s)		36.0						16.0			16.0	
Actuated g/C Ratio		0.60						0.27			0.27	
Clearance Time (s)		3.0						3.0			3.0	
Vehicle Extension (s)		5.0						3.0			3.0	
Lane Grp Cap (vph)		1828						820			694	
v/s Ratio Prot								0.13				
v/s Ratio Perm		0.30									c0.21	
v/c Ratio		0.50						0.50			0.80	
Uniform Delay, d1		6.9						18.6			20.5	
Progression Factor		0.76						1.00			1.00	
Incremental Delay, d2		0.6						2.2			9.2	
Delay (s)		5.8						20.8			29.7	
Level of Service		A						C			C	
Approach Delay (s)		5.8			0.0			20.8			29.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0		4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91				1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99				0.94		1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00		0.95	1.00
Frt	1.00	1.00		1.00	0.98				0.86		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00		0.96	1.00
Satd. Flow (prot)	1583	4522		1583	4399				1355		1519	1302
Flt Permitted	0.95	1.00		0.95	1.00				1.00		0.96	1.00
Satd. Flow (perm)	1583	4522		1583	4399				1355		1519	1302
Volume (vph)	146	1958	46	36	1716	288	0	0	87	350	25	229
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	152	2040	48	38	1788	300	0	0	91	365	26	239
RTOR Reduction (vph)	0	2	0	0	23	0	0	0	66	0	0	124
Lane Group Flow (vph)	152	2086	0	38	2065	0	0	0	25	0	391	115
Confl. Peds. (#/hr)	26		44	44		26	50		36	36		50
Confl. Bikes (#/hr)			5			6						3
Turn Type	Prot			Prot					custom	Perm		Perm
Protected Phases	5	2		1	6						4	
Permitted Phases									8	4		4
Actuated Green, G (s)	11.6	58.4		3.6	50.4				29.0		29.0	29.0
Effective Green, g (s)	10.6	57.4		2.6	49.4				28.0		28.0	28.0
Actuated g/C Ratio	0.11	0.57		0.03	0.49				0.28		0.28	0.28
Clearance Time (s)	3.0	3.0		3.0	3.0				3.0		3.0	3.0
Vehicle Extension (s)	2.0	5.0		2.0	5.0				3.0		3.0	3.0
Lane Grp Cap (vph)	168	2596		41	2173				379		425	365
v/s Ratio Prot	c0.10	0.46		0.02	c0.47							
v/s Ratio Perm									0.02		0.26	0.09
v/c Ratio	0.90	0.80		0.93	0.95				0.07		0.92	0.32
Uniform Delay, d1	44.2	16.8		48.6	24.1				26.4		34.9	28.4
Progression Factor	1.00	1.00		0.62	1.72				1.00		1.00	1.00
Incremental Delay, d2	42.1	2.7		24.5	1.3				0.3		27.6	2.3
Delay (s)	86.3	19.6		54.5	42.9				26.8		62.5	30.7
Level of Service	F	B		D	D				C		E	C
Approach Delay (s)		24.1			43.1			26.8			50.4	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1118	2229		1118	2228		1118	2164		1118	2198	
Flt Permitted	0.07	1.00		0.07	1.00		0.20	1.00		0.16	1.00	
Satd. Flow (perm)	83	2229		83	2228		237	2164		188	2198	
Volume (vph)	51	2115	43	76	1895	42	79	826	225	57	582	72
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	53	2203	45	79	1974	44	82	860	234	59	606	75
RTOR Reduction (vph)	0	1	0	0	2	0	0	7	0	0	11	0
Lane Group Flow (vph)	53	2247	0	79	2016	0	82	1088	0	59	670	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	56.5	56.5		56.5	56.5		24.8	24.8		24.8	24.8	
Effective Green, g (s)	57.0	57.0		57.0	57.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.28	0.28		0.28	0.28	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	53	1412		53	1411		66	601		52	611	
v/s Ratio Prot		c1.01			0.90			c0.50			0.30	
v/s Ratio Perm	0.64			0.96			0.35			0.31		
v/c Ratio	1.00	1.59		1.49	1.43		1.24	1.81		1.13	1.10	
Uniform Delay, d1	16.5	16.5		16.5	16.5		32.5	32.5		32.5	32.5	
Progression Factor	1.00	1.00		0.61	0.61		0.53	0.52		1.00	1.00	
Incremental Delay, d2	123.6	269.4		229.7	193.4		120.5	364.9		166.6	65.7	
Delay (s)	140.1	285.9		239.7	203.5		137.6	381.7		199.1	98.2	
Level of Service	F	F		F	F		F	F		F	F	
Approach Delay (s)		282.5			204.9			364.6			106.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	251.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	162.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00		0.95	
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85		0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1118	2203		1118	2226		1118	2235	1000		2214	
Flt Permitted	0.18	1.00		0.08	1.00		0.26	1.00	1.00		1.00	
Satd. Flow (perm)	208	2203		90	2226		301	2235	1000		2214	
Volume (vph)	116	1666	180	70	1054	30	82	917	192	0	598	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	122	1754	189	74	1109	32	86	965	202	0	629	42
RTOR Reduction (vph)	0	9	0	0	2	0	0	0	11	0	5	0
Lane Group Flow (vph)	122	1934	0	74	1139	0	86	965	191	0	666	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8			
Actuated Green, G (s)	51.5	51.5		51.5	51.5		29.8	29.8	29.8		29.8	
Effective Green, g (s)	52.0	52.0		52.0	52.0		30.0	30.0	30.0		30.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.33	0.33	0.33		0.33	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2	4.2		4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	120	1273		52	1286		100	745	333		738	
v/s Ratio Prot		c0.88			0.51			c0.43			0.30	
v/s Ratio Perm	0.59			0.82			0.29		0.19			
v/c Ratio	1.02	1.52		1.42	0.89		0.86	1.30	0.57		0.90	
Uniform Delay, d1	19.0	19.0		19.0	16.4		28.0	30.0	24.7		28.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		0.47	
Incremental Delay, d2	86.7	237.8		271.9	9.2		57.7	142.8	7.0		1.9	
Delay (s)	105.7	256.8		290.9	25.6		85.7	172.8	31.7		15.3	
Level of Service	F	F		F	C		F	F	C		B	
Approach Delay (s)		247.8			41.8			144.0			15.3	
Approach LOS		F			D			F			B	

Intersection Summary			
HCM Average Control Delay	144.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	140.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		0.95						0.95			0.95	
Frpb, ped/bikes		1.00						0.97			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.97						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		2991						2990			3141	
Flt Permitted		0.99						1.00			0.64	
Satd. Flow (perm)		2991						2990			2008	
Volume (vph)	159	446	169	0	0	0	0	915	176	97	779	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	185	519	197	0	0	0	0	1064	205	113	906	0
RTOR Reduction (vph)	0	43	0	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	0	858	0	0	0	0	0	1242	0	0	1019	0
Confl. Peds. (#/hr)	60								223	223		
Confl. Bikes (#/hr)			1						3			
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		21.0						33.0			33.0	
Effective Green, g (s)		20.0						32.0			32.0	
Actuated g/C Ratio		0.33						0.53			0.53	
Clearance Time (s)		3.0						3.0			3.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		997						1595			1071	
v/s Ratio Prot								0.42				
v/s Ratio Perm		0.29									c0.51	
v/c Ratio		0.86						0.78			0.97dl	
Uniform Delay, d1		18.7						11.2			13.3	
Progression Factor		1.45						1.00			1.00	
Incremental Delay, d2		5.3						3.8			18.0	
Delay (s)		32.5						15.0			31.3	
Level of Service		C						B			C	
Approach Delay (s)		32.5			0.0			15.0			31.3	
Approach LOS		C			A			B			C	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00		0.95	
Frpb, ped/bikes	1.00	0.97		1.00	0.98		1.00	1.00	0.80		0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1583	4347		1583	4395		1583	3167	1133		2954	
Flt Permitted	0.09	1.00		0.09	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (perm)	152	4347		149	4395		1583	3167	1133		2954	
Volume (vph)	133	2103	222	206	1647	137	285	995	80	0	965	273
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	141	2237	236	219	1752	146	303	1059	85	0	1027	290
RTOR Reduction (vph)	0	13	0	0	10	0	0	0	56	0	26	0
Lane Group Flow (vph)	141	2460	0	219	1888	0	303	1059	29	0	1291	0
Confl. Peds. (#/hr)	216		278	278		216	112		142	142		112
Confl. Bikes (#/hr)			9			5			5			3
Turn Type	pm+pt			pm+pt			Prot		Perm			
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2			6					8			
Actuated Green, G (s)	53.3	45.0		54.7	45.7		8.9	34.9	34.9		22.9	
Effective Green, g (s)	51.3	44.0		52.7	44.7		8.0	34.0	34.0		22.0	
Actuated g/C Ratio	0.52	0.45		0.54	0.46		0.08	0.35	0.35		0.22	
Clearance Time (s)	3.0	3.0		3.0	3.0		3.1	3.1	3.1		3.1	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	186	1952		197	2005		129	1099	393		663	
v/s Ratio Prot	0.06	c0.57		c0.09	0.43		c0.19	0.33			c0.44	
v/s Ratio Perm	0.34			0.51					0.03			
v/c Ratio	0.76	1.26		1.11	0.94		2.35	0.96	0.08		1.95	
Uniform Delay, d1	18.5	27.0		47.2	25.4		45.0	31.4	21.5		38.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	14.5	121.5		97.3	10.4		630.4	19.7	0.4		431.5	
Delay (s)	32.9	148.5		144.5	35.8		675.4	51.1	21.8		469.5	
Level of Service	C	F		F	D		F	D	C		F	
Approach Delay (s)		142.3			47.0			180.1			469.5	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	180.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.54		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	136.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95		1.00	0.95		1.00	0.95	
Frt		0.96			0.97		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3011			3032		1583	3139		1583	3140	
Flt Permitted		0.83			0.72		0.09	1.00		0.09	1.00	
Satd. Flow (perm)		2526			2208		146	3139		148	3140	
Volume (vph)	62	230	114	81	193	72	84	1188	75	68	1198	70
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	68	253	125	89	212	79	92	1305	82	75	1316	77
RTOR Reduction (vph)	0	45	0	0	26	0	0	4	0	0	4	0
Lane Group Flow (vph)	0	401	0	0	354	0	92	1383	0	75	1389	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		29.0			29.0		52.5	46.6		51.5	46.1	
Effective Green, g (s)		28.0			28.0		50.5	45.6		49.5	45.1	
Actuated g/C Ratio		0.31			0.31		0.56	0.51		0.55	0.50	
Clearance Time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Vehicle Extension (s)		3.0			3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		786			687		160	1590		152	1573	
v/s Ratio Prot							c0.03	0.44		0.02	c0.44	
v/s Ratio Perm		0.16			c0.16		0.29			0.25		
v/c Ratio		0.51			0.52		0.57	0.87		0.49	0.88	
Uniform Delay, d1		25.4			25.4		14.8	19.6		14.3	20.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4			0.7		3.1	6.8		0.9	7.5	
Delay (s)		27.7			26.1		17.8	26.3		15.2	27.6	
Level of Service		C			C		B	C		B	C	
Approach Delay (s)		27.7			26.1			25.8			27.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.4%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95			0.95	
Frt	1.00	1.00		1.00	1.00		1.00	0.95			0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1583	4529		1583	4550		1583	3012			3085	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1583	4529		1583	4550		1583	3012			3085	
Volume (vph)	64	2985	94	19	2352	0	5	298	143	0	625	130
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	67	3109	98	20	2450	0	5	310	149	0	651	135
RTOR Reduction (vph)	0	3	0	0	0	0	0	64	0	0	20	0
Lane Group Flow (vph)	67	3204	0	20	2450	0	5	395	0	0	766	0
Turn Type	Prot			Prot			Split					
Protected Phases	1!	2!		5!	6!		8	8			7	
Permitted Phases												
Actuated Green, G (s)	6.6	32.7		4.6	33.7		13.7	13.7			22.0	
Effective Green, g (s)	6.1	32.2		4.6	33.7		13.7	13.7			22.0	
Actuated g/C Ratio	0.07	0.36		0.05	0.37		0.15	0.15			0.24	
Clearance Time (s)	3.5	3.5		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	107	1620		81	1704		241	458			754	
v/s Ratio Prot	c0.04	c0.71		0.01	0.54		0.00	c0.13			c0.25	
v/s Ratio Perm												
v/c Ratio	0.63	1.98		0.25	1.44		0.02	0.86			1.02	
Uniform Delay, d1	40.8	28.9		41.0	28.1		32.4	37.2			34.0	
Progression Factor	1.25	0.51		1.52	0.31		1.00	1.00			1.00	
Incremental Delay, d2	1.0	440.1		0.1	197.3		0.0	15.2			36.9	
Delay (s)	52.0	454.9		62.5	206.0		32.5	52.5			70.9	
Level of Service	D	F		E	F		C	D			E	
Approach Delay (s)		446.6			204.9			52.3			70.9	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM Average Control Delay	292.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt		0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4514		1583	4518		1583	3161		1583	3167	
Flt Permitted		1.00		0.95	1.00		0.18	1.00		0.18	1.00	
Satd. Flow (perm)		4514		1583	4518		303	3161		303	3167	
Volume (vph)	0	2964	164	21	2222	110	106	810	10	7	908	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	3056	169	22	2291	113	109	835	10	7	936	0
RTOR Reduction (vph)	0	6	0	0	6	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	3219	0	22	2398	0	109	844	0	7	936	0
Turn Type				Prot			Perm			Perm		
Protected Phases		2!		5!	6			7			7	
Permitted Phases							7			7		
Actuated Green, G (s)		32.7		4.6	33.7		22.0	22.0		22.0	22.0	
Effective Green, g (s)		32.2		4.6	33.7		22.0	22.0		22.0	22.0	
Actuated g/C Ratio		0.36		0.05	0.37		0.24	0.24		0.24	0.24	
Clearance Time (s)		3.5		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1615		81	1692		74	773		74	774	
v/s Ratio Prot		c0.71		c0.01	0.53			0.27			0.30	
v/s Ratio Perm							c0.36			0.02		
v/c Ratio		1.99		0.27	1.42		1.47	1.09		0.09	1.21	
Uniform Delay, d1		28.9		41.1	28.1		34.0	34.0		26.3	34.0	
Progression Factor		0.28		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		447.0		1.8	191.4		272.1	60.4		2.5	106.1	
Delay (s)		455.2		42.9	219.6		306.1	94.4		28.8	140.1	
Level of Service		F		D	F		F	F		C	F	
Approach Delay (s)		455.2			218.0			118.6			139.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	296.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	29.7
Intersection Capacity Utilization	112.7%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.95						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.94		1.00	1.00	
Flpb, ped/bikes		0.92						1.00		0.83	1.00	
Frt		0.99						0.97		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		2845						2912		1312	3167	
Flt Permitted		0.99						1.00		0.44	1.00	
Satd. Flow (perm)		2845						2912		602	3167	
Volume (vph)	182	575	31	0	0	0	0	333	67	94	641	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	192	605	33	0	0	0	0	351	71	99	675	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	0	825	0	0	0	0	0	394	0	99	675	0
Confl. Peds. (#/hr)	173		248	248		173	221		404	404		221
Confl. Bikes (#/hr)			3			2			1			4
Turn Type	Perm									Perm		
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		17.0						17.0		17.0	17.0	
Effective Green, g (s)		16.0						16.0		16.0	16.0	
Actuated g/C Ratio		0.27						0.27		0.27	0.27	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Vehicle Extension (s)		5.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		759						777		161	845	
v/s Ratio Prot								0.14			c0.21	
v/s Ratio Perm		0.29								0.16		
v/c Ratio		1.09						0.51		0.61	0.80	
Uniform Delay, d1		22.0						18.7		19.3	20.5	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		58.8						2.4		16.3	7.8	
Delay (s)		80.8						21.0		35.6	28.3	
Level of Service		F						C		D	C	
Approach Delay (s)		80.8			0.0			21.0			29.2	
Approach LOS		F			A			C			C	

Intersection Summary			
HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	82.1%	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												
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			0.98		1.00	0.87		1.00	1.00	0.78
Flpb, ped/bikes	1.00	1.00			1.00		0.86	1.00		1.00	1.00	1.00
Frt	1.00	1.00			0.99		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1583	4521			4408		1361	1353		1583	1667	1102
Flt Permitted	0.08	1.00			1.00		0.58	1.00		0.95	1.00	1.00
Satd. Flow (perm)	142	4521			4408		826	1353		1583	1667	1102
Volume (vph)	100	2244	29	0	2130	156	111	97	82	168	294	161
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	2290	30	0	2173	159	113	99	84	171	300	164
RTOR Reduction (vph)	0	1	0	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	102	2319	0	0	2323	0	113	183	0	171	300	164
Confl. Peds. (#/hr)	244		131	131		244	166		211	211		166
Confl. Bikes (#/hr)			3			5			2			3
Turn Type	Perm						Perm			Prot		custom
Protected Phases		2			6			8		7		
Permitted Phases	2						8				4	4
Actuated Green, G (s)	48.1	48.1			48.1		21.0	21.0		11.9	35.9	35.9
Effective Green, g (s)	47.1	47.1			47.1		20.0	20.0		10.9	34.9	34.9
Actuated g/C Ratio	0.52	0.52			0.52		0.22	0.22		0.12	0.39	0.39
Clearance Time (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Vehicle Extension (s)	5.0	5.0			5.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	74	2366			2307		184	301		192	646	427
v/s Ratio Prot		0.51			0.53			0.14		c0.11		
v/s Ratio Perm	c0.72						c0.14				0.18	0.15
v/c Ratio	1.38	0.98			1.01		0.61	0.61		0.89	0.46	0.38
Uniform Delay, d1	21.4	21.0			21.4		31.5	31.5		39.0	20.6	19.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	234.6	14.4			20.4		14.4	8.8		36.2	2.4	2.6
Delay (s)	256.0	35.3			41.9		45.9	40.3		75.2	23.0	22.4
Level of Service	F	D			D		D	D		E	C	C
Approach Delay (s)		44.6			41.9			42.4			36.9	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBR2
Lane Configurations									
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0
Lane Util. Factor		1.00	0.91		1.00	0.91			1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.97			1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00			1.00
Frt		1.00	0.99		1.00	0.98			0.86
Flt Protected		0.95	1.00		0.95	1.00			1.00
Satd. Flow (prot)		1583	4437		1583	4320			1442
Flt Permitted		0.95	1.00		0.95	1.00			1.00
Satd. Flow (perm)		1583	4437		1583	4320			1442
Volume (vph)	220	573	2205	121	563	1449	110	69	283
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	227	591	2273	125	580	1494	113	71	292
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	257
Lane Group Flow (vph)	0	818	2392	0	580	1678	0	0	35
Confl. Peds. (#/hr)	99	154		137	137		99	154	155
Confl. Bikes (#/hr)				6			7	10	2
Turn Type	Prot	Prot			Prot				custom
Protected Phases	1	1	2		8	6			1
Permitted Phases									
Actuated Green, G (s)		13.0	52.0		26.0	81.0			13.0
Effective Green, g (s)		12.0	51.0		25.0	80.0			12.0
Actuated g/C Ratio		0.12	0.51		0.25	0.80			0.12
Clearance Time (s)		3.0	3.0		3.0	3.0			3.0
Vehicle Extension (s)		2.5	5.0		3.0	5.0			2.5
Lane Grp Cap (vph)		190	2263		396	3456			173
v/s Ratio Prot		c0.52	c0.54		c0.37	0.39			0.02
v/s Ratio Perm									
v/c Ratio		4.31	1.06		1.46	0.49			0.20
Uniform Delay, d1		44.0	24.5		37.5	3.3			39.7
Progression Factor		1.19	1.54		1.00	1.00			1.00
Incremental Delay, d2		1488.5	26.9		222.6	0.5			0.4
Delay (s)		1540.7	64.6		260.1	3.8			40.1
Level of Service		F	E		F	A			D
Approach Delay (s)			440.0			69.6			
Approach LOS			F			E			

Intersection Summary			
HCM Average Control Delay	274.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.86	0.86		1.00	0.91			0.95	1.00		0.86	0.86
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.98	0.85
Flt Protected	0.95	0.99		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	961	3002		1118	3209			2235	1000		2979	860
Flt Permitted	0.95	0.69		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	961	2101		1118	3209			2235	1000		2979	860
Volume (vph)	775	1579	24	216	1800	10	0	1141	580	0	1322	966
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	881	1794	27	245	2045	11	0	1297	659	0	1502	1098
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	212	0	17	326
Lane Group Flow (vph)	461	2240	0	245	2055	0	0	1297	447	0	1696	561
Turn Type	Prot			Prot					Perm			Over
Protected Phases	7	4		3	8			2			6	7
Permitted Phases									2			
Actuated Green, G (s)	16.9	41.4		14.9	39.4			29.4	29.4		29.4	16.9
Effective Green, g (s)	18.0	42.0		16.0	40.0			30.0	30.0		30.0	18.0
Actuated g/C Ratio	0.18	0.42		0.16	0.40			0.30	0.30		0.30	0.18
Clearance Time (s)	5.1	4.6		5.1	4.6			4.6	4.6		4.6	5.1
Vehicle Extension (s)	3.0	3.0		5.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	173	1045		179	1284			671	300		894	155
v/s Ratio Prot	0.48	0.39		0.22	c0.64			c0.58			0.57	c0.65
v/s Ratio Perm		c0.51							0.45			
v/c Ratio	2.66	2.14		1.37	1.60			1.93	1.49		1.90	3.62
Uniform Delay, d1	41.0	29.0		42.0	30.0			35.0	35.0		35.0	41.0
Progression Factor	1.00	1.00		1.17	0.60			1.00	1.00		1.00	1.00
Incremental Delay, d2	765.4	517.7		178.6	271.7			425.3	237.3		408.0	1195.9
Delay (s)	806.4	546.7		227.8	289.7			460.3	272.3		443.0	1236.9
Level of Service	F	F		F	F			F	F		F	F
Approach Delay (s)		591.0			283.2			397.0			713.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	510.6	HCM Level of Service	F
HCM Volume to Capacity ratio	2.35		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	172.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frt		1.00		1.00	1.00		1.00	1.00	0.85	1.00	0.94	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3177		1118	3205		1118	2235	1000	1118	2096	
Flt Permitted		0.67		0.95	1.00		0.13	1.00	1.00	0.13	1.00	
Satd. Flow (perm)		2163		1118	3205		157	2235	1000	157	2096	
Volume (vph)	485	1876	10	360	1348	21	10	814	354	28	613	438
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	495	1914	10	367	1376	21	10	831	361	29	626	447
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	209	0	129	0
Lane Group Flow (vph)	0	2418	0	367	1395	0	10	831	152	29	944	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Actuated Green, G (s)		41.4		14.9	39.4		29.4	29.4	29.4	29.4	29.4	
Effective Green, g (s)		42.0		16.0	40.0		30.0	30.0	30.0	30.0	30.0	
Actuated g/C Ratio		0.42		0.16	0.40		0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)		4.6		5.1	4.6		4.6	4.6	4.6	4.6	4.6	
Vehicle Extension (s)		3.0		5.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1091		179	1282		47	671	300	47	629	
v/s Ratio Prot		c0.40		c0.33	0.44			0.37			c0.45	
v/s Ratio Perm		c0.53					0.06		0.15	0.18		
v/c Ratio		2.22		2.05	1.09		0.21	1.24	0.51	0.62	1.50	
Uniform Delay, d1		29.0		42.0	30.0		26.2	35.0	28.9	30.1	35.0	
Progression Factor		0.79		0.93	1.48		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		547.8		490.2	52.0		10.1	119.8	6.0	48.2	233.8	
Delay (s)		570.6		529.4	96.3		36.2	154.8	34.9	78.3	268.8	
Level of Service		F		F	F		D	F	C	E	F	
Approach Delay (s)		570.6			186.4			117.8			263.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	330.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	174.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			