Spruill Avenue Lane Reduction Analysis
North Charleston, SC

PREPARED FOR:

CHARLESTON COUNTY
SOUTH CAROLINA

Charleston County Transportation Committee

November 30, 2011

SOUTH CAROLINA
DAVIS & FLOYD, INC.
No. C00538
CERTIFICATE OF AUTHORIZATION

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11-30-11

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INTRODUCTION

Charleston County, through the County Transportation Committee, has requested Davis & Floyd, Inc. conduct an evaluation and feasibility analysis to reduce the number of vehicular travel lanes along Spruill Avenue (S-10-32) from the current five-lane cross section to either a three-lane or four-lane cross section so that dedicated bicycle lanes can be installed. This evaluation included a level-of-service (LOS) analysis at each of the signalized intersections along the corridor for both the existing and future traffic conditions (2018, 2025, and 2035 horizon years). The growth projections for the study's future horizon years were based upon the following data:

- 2018: ADT data for the Spruill Avenue corridor as defined by Berkeley-Charleston-Dorchester Council Of Governments (BCDCOG) count stations #471 and #473 between 2000 and 2010

- 2025: Traffic volumes and growth projections contained in the Final Environmental Impact Statement (FEIS) prepared by the State Ports Authority for the Navy Base Container Terminal and Port Access Road

- 2035: Growth projections and traffic volumes contained in the Charleston Area Transportation Study (CHATS) 2035 E+C Traffic Model as well as trip distribution patterns from the FEIS

The study horizons were selected to evaluate the corridor with and without the proposed Port Access Road and Navy Base Container Terminal as well as to assess long term growth projections outlined in the CHATS 2035 E+C model.

STUDY AREA:

Based upon discussions with both Charleston County and SC Department of Transportation (SCDOT) staff, the study area for this project will focus on the ten (10) existing signalized intersections along the Spruill Avenue corridor. The study area intersections are as follows:

- Spruill Avenue / E. Montague Avenue
- Spruill Avenue / Buist Avenue
- Spruill Avenue / Aragon Avenue
- Spruill Avenue / McMillan Avenue
- Spruill Avenue / Cosgrove Avenue
- Spruill Avenue / Reynolds Avenue
- Spruill Avenue / N. Carolina Avenue
- Spruill Avenue / Burton Lane / Viaduct Road
- Spruill Avenue / Stromboli Avenue (Future signal recommended in FEIS)
- Spruill Avenue / I-26 On/Off Ramps
- Spruill Avenue / Meeting Street Road

The spacing of the study area intersections as well as the number of un-signalized side street intersections located between the traffic signals are shown in *TABLE* **1** below.

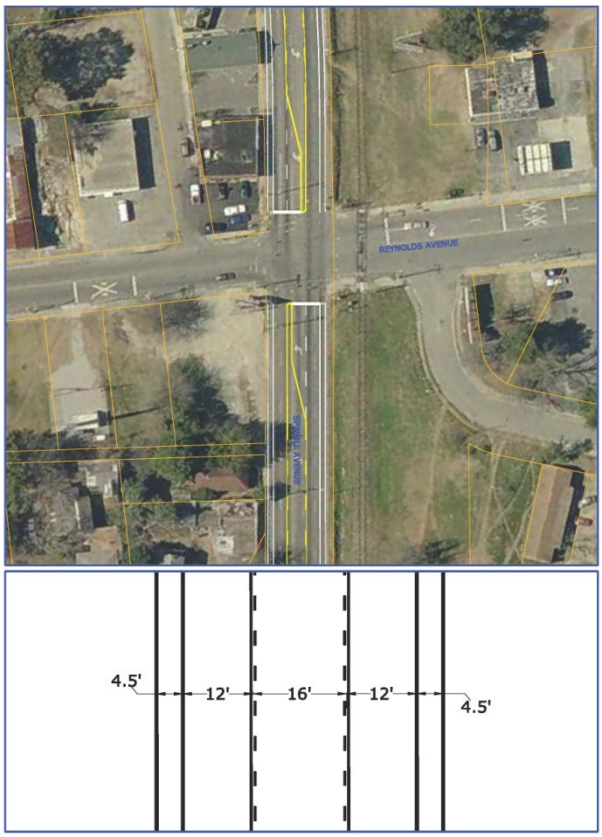
TABLE 1
Intersection Spacing

Signalized Intersection	Spacing Between Signals (ft)	# of Un-signalized Side Street Intersections
E. Montague Avenue		
	1,100	0
Buist Avenue		
	2,000	3
Aragon Avenue		
	4,750	2
McMillan Avenue		
	750	1
Cosgrove Avenue		
	1,500	1
Reynolds Avenue		
	2,300	7
N. Carolina Avenue		
	2,100	6
Viaduct Road / Burton Lane		
	4,550	15
I-26 On/Off Ramps		
	1,000	3
Meeting Street Road		

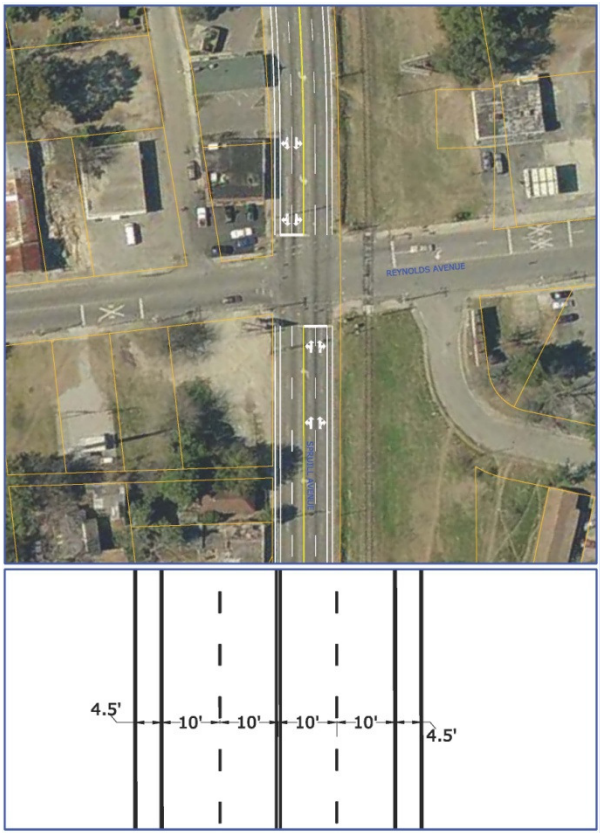
ROADWAY CHARACTERISTICS / ANALYSIS SCENARIOS:

Spruill Avenue is a five-lane urban arterial roadway which extends from Meeting Street Road to E. Montague Avenue within the City of North Charleston. Spruill Avenue is approximately forty eight (48) – forty nine (49) feet in width for most of the study area and the existing lane widths are slightly less than 10'. Although twelve (12) foot travel lanes are normally required for arterial roadways, the existing lane widths were used to evaluate both the 5-lane and 4-lane roadway scenarios. Since 12' travel lanes could be accommodated in the 3-lane scenario, the modeling and capacity analysis for the 3-lane alternative was based upon the 12' lane widths. The proposed 3-lane and 4-lane roadway cross-sections are detailed in *FIGURE 1* on the following page.

FIGURE 1
Typical Roadway Sections



3-lane roadway typical section



4-lane roadway typical section

The Charleston Area Transportation Study (CHATS) Long Range Transportation Plan[1] indicates two different arterial classifications for the Spruill Avenue corridor as follows:

- E. Montague Avenue to McMillan Avenue: **Urban Minor Arterial**
- McMillan Avenue to Viaduct Road / Burton Lane: **Urban Principal Arterial**
- Viaduct Road to Meeting Street Road: **Urban Minor Arterial**

In addition to its classification as an Urban Principal Arterial, the segment of Spruill Avenue between Cosgrove Avenue and Viaduct Road is also part of the National Highway System (NHS). The NHS network was "developed by the United States Department of Transportation in cooperation with states, local officials, and metropolitan planning organizations"[2] and is comprised of roadways that are "important to the nation's economy, defense, and mobility."[2]

1. *CHATS Long-Range Transportation Plan, Chapter 3, pg. 3*
2. *http://www.fhwa.dot.gov/planning/nhs/ September 15, 2011*

EXISTING CONDITIONS:

EXISTING TRAFFIC OPERATIONS:

In order to assess the overall performance of the existing signalized intersections, a detailed field review of the study area was conducted in August 2011. This review included site visits to document the existing roadway geometry and intersection traffic controls as well as conducting turning movement counts for both the AM peak hour (7:00–9:00) and PM peak hour (4:00-6:00) at each of the signalized intersections. The results of these field reviews and traffic counts were used to develop a corridor model using *SYNCHRO Studio 7* and *SimTraffic* modeling software. The traffic models were used to assess the intersection operations (level-of-service (LOS) analysis) as well as the efficiency and delays for the corridor.

The Level-of-Service (LOS) analysis is used to provide an evaluation of the overall operational conditions within the traffic stream. The LOS is defined in the Transportation Research Board's *Highway Capacity Manual* as "a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed, travel time, freedom to maneuver, traffic interruptions, comfort, and convenience."[3] Six LOS categories have been defined and are given letter designations from "A" to "F". LOS "A" represents the best operating conditions (minimal interruptions, good progression) and LOS "F" represents the worst conditions.

For the existing conditions analysis, the current lane geometry and signal phasing were used. *SYNCHRO 7* was used to "optimize" the traffic signal timings to ensure a cycle length with the best overall intersection performance measures was utilized. The results of this analysis, as summarized in *TABLE 2* on the following page, indicates that each intersection is operating at acceptable service levels.

3. *Highway Capacity Manual, p. 5-8,* Transportation Research Board, National Research Council, Washington, D.C., 2000

TABLE 2
Level-of-Service Analysis
2011 Traffic Volumes
Existing (5-Lane) Roadway Geometry

Signalized Intersection	Time Period	LOS[1]	Delay[2]	Volume/Capacity Ratio[3]
E. Montague Ave	AM	A	7.3	0.31
	PM	A	7.9	0.32
Buist Ave	AM	A	8.7	0.37
	PM	B	13.9	0.76
Aragon Ave	AM	A	8.2	0.39
	PM	B	10.3	0.58
McMillan Ave	AM	A	8.9	0.37
	PM	A	9.9	0.53
Cosgrove Ave	AM	A	8.4	0.50
	PM	A	9.5	0.63
Reynolds Ave	AM	A	5.7	0.26
	PM	A	7.7	0.42
N. Carolina Ave	AM	A	8.5	0.27
	PM	A	8.9	0.39
Burton Lane / Viaduct Ave	AM	A	8.9	0.43
	PM	A	9.6	0.52
I-26 Ramps	AM	A	8.0	0.26
	PM	A	7.5	0.31
Meeting Street Road	AM	B	14.1	0.35
	PM	B	20.1	0.55

1. *LOS: Level-of-Service for overall intersection operation*
2. *Vehicle Delay (in seconds) for overall intersection operation*
3. *V/C ratio for overall intersection operation*

2011 LANE REDUCTION SCENARIOS:

In order to assess the impacts of reducing the vehicular travel lanes on Spruill Avenue, additional analysis was conducted to assess the intersection operations if the roadway were reduced to either a 3-lane or 4-lane roadway scenario. The results of the intersection and corridor analyses for the 2011 conditions are summarized in *TABLE 3* and *TABLE 4*.

TABLE 3
Level-of-Service Analysis
2011 Traffic Volumes
Proposed 4-Lane and 3- Lane Roadway Geometry Scenarios

Signalized Intersection	Time Period	4-LANE GEOMETRY			3-LANE GEOMETRY		
		LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]	LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]
E. Montague Ave	AM	A	7.3	0.31	A	7.3	0.31
	PM	A	7.9	0.32	A	7.9	0.32
Buist Ave	AM	A	8.9	0.38	A	8.9	0.37
	PM	B	10.8	0.64	B	12.6	0.70
Aragon Ave	AM	A	8.4	0.43	A	9.4	0.55
	PM	A	10.5	0.58	B	14.2	0.71
McMillan Ave	AM	A	9.3	0.44	B	10.6	0.55
	PM	B	12.0	0.65	B	14.6	0.74
Cosgrove Ave	AM	A	9.2	0.44	B	10.8	0.59
	PM	B	11.1	0.67	B	13.2	0.74
Reynolds Ave	AM	A	5.8	0.29	A	7.0	0.45
	PM	A	8.5	0.51	A	9.7	0.63
N. Carolina Ave	AM	A	8.5	0.27	B	12.1	0.47
	PM	A	8.9	0.39	B	11.7	0.61
Burton Lane / Viaduct Ave	AM	A	9.5	0.51	A	9.7	0.52
	PM	A	9.7	0.52	B	12.6	0.68
I-26 Ramps	AM	A	8.0	0.27	A	8.4	0.36
	PM	A	7.6	0.34	A	8.1	0.48
Meeting Street Road	AM	B	14.1	0.35	B	15.1	0.46
	PM	C	20.1	0.55	C	22.6	0.63

1. *LOS: Level-of-Service for overall intersection operation*
2. *Vehicle Delay (in seconds) for overall intersection operation*
3. *V/C ratio for overall intersection operation*

TABLE 4
Corridor Analysis
2011 Traffic Volumes

Time Period	Analysis Criteria	5-Lane Geometry	4-Lane Geometry	3-Lane Geometry
AM Peak	Total Delay (hr)	22.9	23.3	26.1
	Delay / Veh (s)	19.4	19.3	21.7
	Total Stops	4304	4435	4484
	Travel Dist (mi)	3512.1	3567.5	3491.4
	Travel Time (hr)	127.8	130.1	130.9
	Avg. Speed (mph)	28	28	27
PM Peak	Total Delay (hr)	31.4	31.8	40.3
	Delay / Veh (s)	22.3	23.7	30.1
	Total Stops	5041	5089	5206
	Travel Dist (mi)	4494.8	4467.2	4483.4
	Travel Time (hr)	163.4	162.5	171.6
	Avg. Speed (mph)	28	28	27

As indicated in *TABLE 3* and *TABLE 4*, the Spruill Avenue corridor is currently operating at acceptable service levels. While there would be some slight increases in delays and travel times when compared to the existing 5-lane configuration, the current traffic volumes along Spruill Avenue are at levels where the corridor would operate at acceptable service levels if converted to either a 3-lane or 4-lane configuration.

2018 ANALYSIS SCENARIO:

In order to assess the traffic conditions along Spruill Avenue in 2018 prior to the opening of the proposed Navy Base Container Terminal and the Port Access Road, a review of the historic ADT information was conducted to determine the growth rates along the Spruill Avenue corridor. The historic ADT information and growth projections are summarized below in *TABLE 5*.

TABLE 5
Historic ADT Volumes and Growth Projections

Location	Year	ADT	Annual Growth
Count station #471	2000	9,800	**1.1%**
	2010	10,900	
Count station #473	2000	8,300	**3.0%**
	2010	11,200	

The annual growth rates calculated in *TABLE 5* were applied to the 2011 traffic volumes to predict the 2018 future year conditions. Since this scenario is intended to assess the 2018 conditions prior to the opening of the port terminal, the analysis does not include traffic volumes or roadway modifications associated with the new terminal. The traffic modeling was based upon the existing traffic signal phasing and "optimized" traffic signal timings. The results of the 3-lane, 4-lane, and 5-lane scenarios are summarized in *TABLE 6* and *TABLE 7*.

TABLE 6
Level-of-Service Analysis
2018 PM Peak Traffic Volumes
5-Lane, 4-Lane, and 3- Lane Roadway Geometry Scenarios

Signalized Intersection	Time Period	5-lane geometry			4-lane geometry			3-lane geometry		
		LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]	LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]	LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]
E. Montague Ave	PM	A	8.1	0.36	A	8.1	0.36	A	7.9	0.32
Buist Ave	PM	B	15.7	0.73	B	12.2	0.69	B	13.4	0.72
Aragon Ave	PM	B	11.7	0.67	B	11.9	0.67	B	14.8	0.75
McMillan Ave	PM	B	12.2	0.66	B	18.6	0.86	C	24.1	0.93
Cosgrove Ave	PM	B	12.9	0.76	B	15.8	0.82	B	18.4	0.86
Reynolds Ave	PM	A	8.7	0.56	B	11.0	0.64	B	14.3	0.77
N. Carolina Ave	PM	A	10.5	0.52	B	10.5	0.52	B	13.7	0.72
Burton Lane / Viaduct Ave	PM	B	11.9	0.68	B	12.2	0.68	B	15.4	0.79
I-26 Ramps	PM	A	7.8	0.40	A	7.9	0.44	B	11	0.66
Meeting St Rd	PM	B	18.9	0.66	B	18.9	0.65	B	19.3	0.71

1. *LOS: Level-of-Service for overall intersection operation*
2. *Vehicle Delay (in seconds) for overall intersection operation*
3. *V/C ratio for overall intersection operation*

TABLE 7
Corridor Analysis
2018 Traffic Volumes

Time Period	Analysis Criteria	5-Lane Geometry	4-Lane Geometry	3-Lane Geometry
PM Peak	Total Delay (hr)	49.8	51.2	65.8
	Delay / Veh (s)	27.6	28.3	37.2
	Total Stops	7187	7012	7285
	Travel Dist (mi)	5816.1	5777.8	5730.8
	Travel Time (hr)	219.8	220.4	233.6
	Avg. Speed (mph)	27	27	25

As indicated in *TABLE 6* and *TABLE 7*, there are some slight increases in intersection delay but overall each of the intersections is expected to operate at acceptable service levels through the 2018 future year scenario. In addition, the projected delays and travel speeds for the 4-lane scenario are very similar to the 5-lane section. However, for the 3-lane scenario, the traffic volumes on several intersection approaches are nearing capacity. Although each intersection is expected to operate at acceptable levels, the overall corridor delay is increased and the travel speeds are reduced when compared to the 4-lane or 5-lane scenarios.

2025 ANALYSIS SCENARIO:

The Spruill Avenue corridor is expected to experience significant changes with the planned opening of the Navy Base Container Terminal and Port Access Road in December, 2018. The new port terminal is expected to add traffic to the Spruill Avenue corridor and, due to the planned closures of the Spruill Avenue / I-26 interchange, change many of the current travel patterns. In order to assess the impacts of the new terminal and the changes to existing travel patterns, the State Ports Authority conducted detailed analysis of the Spruill Avenue corridor between Meeting Street Road and McMillan Avenue. The following is a summary of the recommended intersection geometry outlined in the FEIS:

- **Spruill Avenue / Viaduct Road**[4]
  - EB Viaduct Rd: Provide left and through/right lanes
  - WB Viaduct Rd: Provide left, left/through, and right turn lanes
  - NB Spruill Ave: Maintain left/through, through, and right turn lane
  - SB Spruill Ave: Maintain left, through, and through/right lanes

4. *Port FEIS (Access Roadway Feasibility Study Supplemental Traffic Report November 2006), Table 8, pg. 20.*

- **Spruill Avenue / Stromboli Avenue**[4]:
  - EB Stromboli Ave: Widen to provide separate left and right turn lanes
  - WB Stromboli Ave: Provide left, through, and right turn lanes
  - NB Spruill Ave: Maintain existing left, through, and through/right lanes
  - SB Spruill Ave: Maintain existing left, through, and through/right lanes

- **Spruill Avenue / Meeting Street Road**[4]:
  - EB Meeting St Rd: Maintain existing dual right turn
  - NB Spruill Ave: Maintain existing left and dual through lanes
  - SB Spruill Ave: Maintain existing dual through lanes

Given the intersection geometry outlined above, each of the intersections is expected to operate at LOS C or better.

In order to assess the operation of Spruill Avenue as either a 3-lane or 4-lane cross section in 2025, additional analysis was conducted. This analysis used the actual 2025 traffic volumes from the FEIS study area intersections and, for the remaining signalized intersections at Aragon Ave, Buist Ave, and E. Montague Ave, traffic volumes were estimated based upon the projections in the FEIS study and to maintain traffic volume balance on the roadway segments. A summary of the intersection and corridor analysis is provided in *TABLE 8* and *TABLE 9*.

4. *Port FEIS (Access Roadway Feasibility Study Supplemental Traffic Report November 2006), Table 8, pg. 20.*

TABLE 8
Level-of-Service Analysis
2025 PM Peak Traffic Volumes
5-Lane, 4-Lane, and 3- Lane Roadway Geometry Scenarios

Signalized Intersection	5-LANE GEOMETRY			4-LANE GEOMETRY			3-LANE GEOMETRY		
	LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]	LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]	LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]
E. Montague Ave	B	10.7	0.62	B	12.7	0.45	B	19.9	0.54
Buist Ave	**E**	57.3	**1.09**	**F**	81.3	**1.15**	E	60.0	**1.07**
Aragon Ave	B	11.0	0.74	B	11.3	0.74	D	35.9	**1.01**
McMillan Ave	**E**	57.0	0.87	**F**	179.9	**1.50**	**F**	163.7	**1.42**
Cosgrove Ave	C	34.3	**1.00**	**F**	82.5	**1.19**	**F**	86.5	**1.18**
Reynolds Ave	C	21.0	0.85	**E**	59.5	**1.12**	**E**	64.7	**1.13**
N. Carolina Ave	B	11.5	0.74	A	7.5	0.72	D	48.1	**1.07**
Burton Lane / Viaduct Ave	C	28.5	0.76	C	31.0	0.76	**E**	73.9	**1.13**
Stromboli Ave	C	32.8	0.89	D	42.5	**1.01**	**E**	74.2	**1.01**
Meeting St Rd	B	19.5	0.92	B	19.5	0.92	D	36.4	**1.03**

1. *LOS: Level-of-Service for overall intersection operation*
2. *Vehicle Delay (in seconds) for overall intersection operation*
3. *V/C ratio for overall intersection operation*

TABLE 9
Corridor Analysis
2025 Traffic Volumes

Time Period	Analysis Criteria	5-Lane Geometry	4-Lane Geometry	3-Lane Geometry
PM Peak	Total Delay (hr)	584.4	1032.7	1288.8
	Delay / Veh (s)	246.2	469.4	601.6
	Total Stops	18084	22105	29440
	Travel Dist (mi)	10164	9350.7	8890.4
	Travel Time (hr)	878.8	1303.8	1548
	Avg. Speed (mph)	19	13	12

The 2025 analysis outlined in TABLE 8 and TABLE 9 indicates significant impacts to the intersection operations, travel speeds, and vehicle delays for the Spruill Avenue corridor for each of the proposed cross-sections. The impacts are especially apparent on the 3-lane and 4-lane options. These impacts are due to the large traffic volumes expected for developments along the corridor such as the Noisette and Magnolia and the traffic pattern shifts associated with the new Port Access Road and the closure of the existing I-26 interchange ramps at Spruill Ave. In addition to the increased delays reduced travel speeds outlined above, the 3-lane and 4-lane alternatives will not accommodate the intersection geometry (turn lanes etc.) recommended in the FEIS which was conducted by the State Ports Authority

2035 ANALYSIS SCENARIO:

Traffic segment volumes generated from the CHATS 2035 E+C model for the 2035 traffic conditions were provided by BCDCOG staff for Spruill Avenue. Although both the 2035 E+C model and the FEIS study predict future volumes associated with "committed projects" such as the Magnolia and Noisette developments, the projected segment volumes in the 2035 E+C model indicated lower traffic volumes than the projections from the FEIS for the 2025 conditions. This issue was discussed with the BCDCOG staff and several possible reasons for this difference were provided as follows:

- The FEIS was based upon the 2003 CHATS model while the growth projections for this study were based upon the updated 2008 CHATS model

- Trip rates for land uses in the 2008 CHATS model have been adjusted from those used in the previous model editions

- CHATS model is used to evaluate overall regional growth and may not accurately reflect traffic volumes along specific corridor segments

In order to maintain the trip assignments and distributions from the FEIS as well as the growth projections outlined in the CHATS model, the 2025 intersection volumes outlined in the FEIS were adjusted downward to match the segment volumes from the CHATS model. The intersections were then evaluated as 5-lane, 4-lane, and 3-lane roadway scenarios. The results of the intersection and corridor analyses are summarized in *TABLE 10* and *TABLE 11* on the following page.

TABLE 10
Level-of-Service Analysis
2035 PM Peak Traffic Volumes
5-Lane, 4-Lane, and 3- Lane Roadway Geometry Scenarios

Signalized Intersection	5-LANE GEOMETRY			4-LANE GEOMETRY			3-LANE GEOMETRY		
	LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]	LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]	LOS[1]	Delay[2]	Volume/ Capacity Ratio[3]
E. Montague Ave	B	10.4	0.64	B	10.9	0.41	B	19.4	0.51
Buist Ave	D	41.6	**1.02**	**E**	59.1	**1.08**	D	46.3	**1.00**
Aragon Ave	B	10.1	0.69	A	9.5	0.72	C	28.2	0.96
McMillan Ave	C	30.2	0.78	**E**	79.5	**1.16**	**F**	81.8	**1.09**
Cosgrove Ave	C	24.1	0.92	D	50.6	0.98	D	42.3	**1.04**
Reynolds Ave	B	14.6	0.70	B	17.1	0.87	D	39.5	**1.00**
N. Carolina Ave	B	10.9	0.65	A	5.8	0.63	C	23.8	0.92
Burton Lane / Viaduct Ave	C	24.4	0.73	C	20.9	0.64	D	38.6	0.86
Stromboli Ave	C	22.3	0.71	C	21.1	0.86	D	40.3	0.89
Meeting Street Road	B	13.6	0.84	B	13.6	0.84	B	18.3	0.90

1. *LOS: Level-of-Service for overall intersection operation*
2. *Vehicle Delay (in seconds) for overall intersection operation*
3. *V/C ratio for overall intersection operation*

TABLE 11
Corridor Analysis
2035 Traffic Volumes

Time Period	Analysis Criteria	5-Lane Geometry	4-Lane Geometry	3-Lane Geometry
PM Peak	Total Delay (hr)	303	362.5	792.5
	Delay / Veh (s)	144.8	174	414
	Total Stops	14989	20072	27452
	Travel Dist (mi)	9248.7	9136.9	8163.1
	Travel Time (hr)	569.9	626.4	1030.1
	Avg. Speed (mph)	20	16	12

Due to the lower traffic volumes, the intersection analyses for the 2035 scenario reflect slightly better service levels than the 2025 scenario. However, even with the traffic volume reductions, the approaches to several of the study intersections are expected to be over capacity if the roadway is converted to either a 3-lane or 4-lane section. This will result in poor intersection service levels, increased vehicle delays, and reduced travel speeds.

CONCLUSIONS:

The intersection and corridor analyses completed for this study generally indicate that the signalized intersections along Spruill Avenue could function at acceptable service levels if the roadway were reduced to either a 4-lane or 3-lane roadway until the opening of the new port terminal and Port Access Road which is anticipated in December 2018. With the opening of the port terminal, several roadway improvements will be made along the southern portion of the Spruill Avenue corridor and the I-26 / Spruill Avenue interchange will be closed. These changes, in addition to the new traffic associated with the port terminal, are expected to have a significant impact the service levels and efficiency of several key intersections along Spruill Avenue if either the 4-lane or 3-lane scenarios are implemented.

RECOMMENDATIONS:

The intersection analysis completed for this study indicates that modifying Spruill Avenue from a 5-lane roadway to a 4-lane section to accommodate the installation of bicycle lanes is feasible in the short term. The 4-lane scenario could be implemented without changing the existing lane widths and would also maintain the existing double left turn movements at Viaduct Road and the I-26 off-ramps. While the existing lane widths (approx 10') are less than the width normally provided for arterial routes, maintaining these lane widths would allow the existing turn lanes at several of the key intersections such as McMillan Avenue and Cosgrove Avenue to remain.

The implementation of the 4-lane markings could coincide with the current County's ongoing resurfacing contract for Spruill Avenue. However, the opening of the Port Access Road in December 2018 and traffic from other planned developments along the corridor are expected to have a significant impact on the flow of traffic and intersection operations along this route. If the 4-lane scenario is implemented, the County should work closely with the SCDOT, City of North Charleston, and the State Ports Authority to monitor the development along this corridor. Additional analysis should be conducted prior to the opening of the Port Access Road (tentatively scheduled for December 2018) to assess the traffic conditions and ensure that the roadway markings and lane configuration are appropriate for the expected traffic conditions.

Traffic Count Data

Palmetto Traffic Data Services, LLc
PO Box 606
Johns Island, SC 29457
Ph. 843-819-5177
palmettotd@wmconnect.com
www.palmettotrafficdata.com

File Name : Spruill Ave @ Reynolds Ave
Site Code : REYNOLDS
Start Date : 8/24/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	Spruill Ave From North					Reynolds Ave From East					Spruill Ave From South					Reynolds Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	11	97	0	2	110	1	2	1	0	4	0	30	7	4	41	10	2	5	1	18	173
07:15 AM	6	85	2	0	93	2	2	0	0	4	1	48	10	1	60	12	7	4	2	25	182
07:30 AM	4	104	3	2	113	3	2	0	0	5	0	51	15	0	66	9	5	1	1	16	200
07:45 AM	7	98	4	3	112	0	4	2	0	6	2	41	17	1	61	12	5	1	1	19	198
Total	28	384	9	7	428	6	10	3	0	19	3	170	49	6	228	43	19	11	5	78	753
08:00 AM	7	88	0	1	96	3	5	1	0	9	1	33	17	0	51	16	3	6	0	25	181
08:15 AM	10	90	0	1	101	2	4	0	0	6	1	37	12	2	52	8	3	1	2	14	173
08:30 AM	6	81	2	0	89	1	2	0	0	3	1	51	14	1	67	15	6	3	1	25	184
08:45 AM	6	53	1	1	61	1	0	0	0	1	0	42	20	0	62	9	1	3	0	13	137
Total	29	312	3	3	347	7	11	1	0	19	3	163	63	3	232	48	13	13	3	77	675
*** BREAK ***																					
04:00 PM	9	44	0	9	62	0	7	0	5	12	2	135	27	6	170	24	6	8	7	45	289
04:15 PM	8	51	3	9	71	3	7	2	3	15	1	116	32	1	150	25	5	8	20	58	294
04:30 PM	9	63	2	8	82	1	6	0	0	7	0	122	21	1	144	21	6	2	14	43	276
04:45 PM	5	52	4	6	67	1	8	1	0	10	5	128	18	5	156	22	9	3	9	43	276
Total	31	210	9	32	282	5	28	3	8	44	8	501	98	13	620	92	26	21	50	189	1135
05:00 PM	9	51	2	7	69	1	7	2	0	10	2	162	23	3	190	25	11	5	4	45	314
05:15 PM	11	51	3	4	69	1	11	0	1	13	0	171	15	4	190	18	9	8	12	47	319
05:30 PM	8	48	3	9	68	1	5	1	0	7	1	97	20	0	118	18	3	5	12	38	231
05:45 PM	10	49	4	9	72	2	8	0	1	11	0	97	21	3	121	17	2	2	2	23	227
Total	38	199	12	29	278	5	31	3	2	41	3	527	79	10	619	78	25	20	30	153	1091
Grand Total	126	1105	33	71	1335	23	80	10	10	123	17	1361	289	32	1699	261	83	65	88	497	3654
Apprch %	9.4	82.8	2.5	5.3		18.7	65	8.1	8.1		1	80.1	17	1.9		52.5	16.7	13.1	17.7		
Total %	3.4	30.2	0.9	1.9	36.5	0.6	2.2	0.3	0.3	3.4	0.5	37.2	7.9	0.9	46.5	7.1	2.3	1.8	2.4	13.6	
Vehicles	111	1094	32	71	1308	23	75	10	10	118	17	1337	284	32	1670	260	78	64	88	490	3586
% Vehicles	88.1	99	97	100	98	100	93.8	100	100	95.9	100	98.2	98.3	100	98.3	99.6	94	98.5	100	98.6	98.1
Trucks	0	3	1	0	4	0	0	0	0	0	0	15	1	0	16	0	1	0	0	1	21
% Trucks	0	0.3	3	0	0.3	0	0	0	0	0	0	1.1	0.3	0	0.9	0	1.2	0	0	0.2	0.6
Bus	15	8	0	0	23	0	5	0	0	5	0	9	4	0	13	1	4	1	0	6	47
% Bus	11.9	0.7	0	0	1.7	0	6.2	0	0	4.1	0	0.7	1.4	0	0.8	0.4	4.8	1.5	0	1.2	1.3

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File Name : Spruill Ave @ North Carolina Ave
Site Code : NCAROLIN
Start Date : 8/25/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	Spruill Ave From North				North Carolina Ave From East				Spruill Ave From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
07:00 AM	123	0	0	123	1	10	0	11	5	54	0	59	193
07:15 AM	111	0	1	112	0	4	0	4	10	46	1	57	173
07:30 AM	115	0	0	115	0	4	0	4	8	38	0	46	165
07:45 AM	90	0	0	90	0	4	0	4	7	57	0	64	158
Total	439	0	1	440	1	22	0	23	30	195	1	226	689
08:00 AM	101	0	0	101	0	8	0	8	13	49	0	62	171
08:15 AM	92	0	0	92	0	5	0	5	13	42	0	55	152
08:30 AM	99	0	0	99	0	10	0	10	11	48	0	59	168
08:45 AM	95	0	0	95	0	7	0	7	11	43	0	54	156
Total	387	0	0	387	0	30	0	30	48	182	0	230	647
*** BREAK ***													
04:00 PM	77	0	0	77	0	14	0	14	14	153	0	167	258
04:15 PM	71	0	0	71	0	6	0	6	10	148	1	159	236
04:30 PM	79	0	0	79	0	12	0	12	7	154	0	161	252
04:45 PM	66	0	0	66	0	17	0	17	17	177	0	194	277
Total	293	0	0	293	0	49	0	49	48	632	1	681	1023
05:00 PM	82	0	0	82	0	14	0	14	9	171	1	181	277
05:15 PM	63	0	0	63	0	16	0	16	11	176	0	187	266
05:30 PM	81	0	0	81	0	9	0	9	6	131	0	137	227
05:45 PM	68	0	0	68	0	10	0	10	10	98	0	108	186
Total	294	0	0	294	0	49	0	49	36	576	1	613	956
Grand Total	1413	0	1	1414	1	150	0	151	162	1585	3	1750	3315
Apprch %	99.9	0	0.1		0.7	99.3	0		9.3	90.6	0.2		
Total %	42.6	0	0	42.7	0	4.5	0	4.6	4.9	47.8	0.1	52.8	
Vehicles	1381	0	1	1382	0	138	0	138	158	1548	3	1709	3229
% Vehicles	97.7	0	100	97.7	0	92	0	91.4	97.5	97.7	100	97.7	97.4
Trucks	24	0	0	24	0	8	0	8	2	25	0	27	59
% Trucks	1.7	0	0	1.7	0	5.3	0	5.3	1.2	1.6	0	1.5	1.8
Bus	8	0	0	8	1	4	0	5	2	12	0	14	27
% Bus	0.6	0	0	0.6	100	2.7	0	3.3	1.2	0.8	0	0.8	0.8

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File Name : Spruill Ave @ E Montague Ave
Site Code : MONTAGUE
Start Date : 8/24/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	North Blvd From North					E Montague Ave From East					Spruill Ave From South					E Montague Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	20	4	0	26	2	8	1	0	11	3	13	2	0	18	3	24	1	0	28	83
07:15 AM	2	17	3	0	22	2	7	1	0	10	3	15	4	0	22	5	17	1	1	24	78
07:30 AM	3	22	5	2	32	2	9	1	2	14	3	14	3	3	23	3	26	1	0	30	99
07:45 AM	2	21	6	1	30	1	12	1	0	14	2	11	4	0	17	3	36	1	1	41	102
Total	9	80	18	3	110	7	36	4	2	49	11	53	13	3	80	14	103	4	2	123	362
08:00 AM	0	17	3	3	23	7	19	2	0	28	7	10	4	0	21	4	39	0	0	43	115
08:15 AM	0	14	3	2	19	2	30	4	0	36	8	8	2	0	18	1	48	1	3	53	126
08:30 AM	0	17	5	0	22	1	10	2	1	14	6	5	1	0	12	3	23	1	3	30	78
08:45 AM	2	12	2	1	17	2	12	0	0	14	9	8	11	0	28	3	26	1	0	30	89
Total	2	60	13	6	81	12	71	8	1	92	30	31	18	0	79	11	136	3	6	156	408
*** BREAK ***																					
04:00 PM	0	9	1	0	10	3	27	5	0	35	4	26	14	0	44	1	15	0	0	16	105
04:15 PM	1	4	5	1	11	1	39	8	0	48	8	21	14	0	43	3	19	1	0	23	125
04:30 PM	0	8	2	0	10	2	33	4	0	39	13	14	10	0	37	5	25	0	0	30	116
04:45 PM	0	13	1	1	15	1	29	14	2	46	10	20	9	1	40	4	27	0	1	32	133
Total	1	34	9	2	46	7	128	31	2	168	35	81	47	1	164	13	86	1	1	101	479
05:00 PM	0	4	1	0	5	6	34	5	0	45	10	24	12	0	46	1	18	0	0	19	115
05:15 PM	0	6	3	3	12	1	41	10	0	52	13	28	17	1	59	1	16	2	1	20	143
05:30 PM	0	9	2	1	12	4	59	6	0	69	25	27	13	1	66	4	26	1	1	32	179
05:45 PM	2	6	1	1	10	8	39	10	1	58	17	25	5	0	47	10	23	2	0	35	150
Total	2	25	7	5	39	19	173	31	1	224	65	104	47	2	218	16	83	5	2	106	587
Grand Total	14	199	47	16	276	45	408	74	6	533	141	269	125	6	541	54	408	13	11	486	1836
Apprch %	5.1	72.1	17	5.8		8.4	76.5	13.9	1.1		26.1	49.7	23.1	1.1		11.1	84	2.7	2.3		
Total %	0.8	10.8	2.6	0.9	15	2.5	22.2	4	0.3	29	7.7	14.7	6.8	0.3	29.5	2.9	22.2	0.7	0.6	26.5	
Vehicles	14	198	46	16	274	43	389	71	6	509	138	269	115	6	528	52	380	12	11	455	1766
% Vehicles	100	99.5	97.9	100	99.3	95.6	95.3	95.9	100	95.5	97.9	100	92	100	97.6	96.3	93.1	92.3	100	93.6	96.2
Trucks	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	2	0	0	0	2	4
% Trucks	0	0	0	0	0	0	0	1.4	0	0.2	0	0	0.8	0	0.2	3.7	0	0	0	0.4	0.2
Bus	0	1	1	0	2	2	19	2	0	23	3	0	9	0	12	0	28	1	0	29	66
% Bus	0	0.5	2.1	0	0.7	4.4	4.7	2.7	0	4.3	2.1	0	7.2	0	2.2	0	6.9	7.7	0	6	3.6

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File Name : Spruill Ave @ Meeting St
Site Code : MEETING
Start Date : 8/25/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	Spruill Ave From North				Meeting St From South				Meeting St From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
07:00 AM	1	37	0	38	32	38	0	70	79	0	0	79	187
07:15 AM	0	65	1	66	37	38	0	75	133	0	0	133	274
07:30 AM	0	49	1	50	30	36	0	66	112	0	0	112	228
07:45 AM	1	60	0	61	39	37	0	76	144	0	0	144	281
Total	2	211	2	215	138	149	0	287	468	0	0	468	970
08:00 AM	1	48	0	49	44	49	0	93	108	0	0	108	250
08:15 AM	2	41	1	44	29	41	0	70	103	0	0	103	217
08:30 AM	0	57	0	57	37	23	0	60	98	0	0	98	215
08:45 AM	0	46	0	46	37	49	0	86	83	0	0	83	215
Total	3	192	1	196	147	162	0	309	392	0	0	392	897
*** BREAK ***													
04:00 PM	0	35	0	35	67	94	0	161	71	0	0	71	267
04:15 PM	1	38	0	39	83	96	0	179	79	0	0	79	297
04:30 PM	1	45	1	47	88	68	0	156	72	0	0	72	275
04:45 PM	4	44	0	48	77	79	0	156	79	0	0	79	283
Total	6	162	1	169	315	337	0	652	301	0	0	301	1122
05:00 PM	1	34	1	36	99	112	0	211	73	0	0	73	320
05:15 PM	5	41	0	46	106	90	0	196	71	0	0	71	313
05:30 PM	0	39	0	39	73	74	0	147	79	0	0	79	265
05:45 PM	0	44	0	44	63	44	0	107	63	0	0	63	214
Total	6	158	1	165	341	320	0	661	286	0	0	286	1112
Grand Total	17	723	5	745	941	968	0	1909	1447	0	0	1447	4101
Apprch %	2.3	97	0.7		49.3	50.7	0		100	0	0		
Total %	0.4	17.6	0.1	18.2	22.9	23.6	0	46.5	35.3	0	0	35.3	
Vehicles	17	697	5	719	915	830	0	1745	1309	0	0	1309	3773
% Vehicles	100	96.4	100	96.5	97.2	85.7	0	91.4	90.5	0	0	90.5	92
Trucks	0	19	0	19	21	122	0	143	120	0	0	120	282
% Trucks	0	2.6	0	2.6	2.2	12.6	0	7.5	8.3	0	0	8.3	6.9
Bus	0	7	0	7	5	16	0	21	18	0	0	18	46
% Bus	0	1	0	0.9	0.5	1.7	0	1.1	1.2	0	0	1.2	1.1

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File Name : Spruill Ave @ McMillan Ave
Site Code : McMILLAN
Start Date : 8/24/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	Spruill Ave From North					McMillan Ave From East					Spruill Ave From South					McMillan Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	30	59	7	0	96	11	55	12	0	78	17	93	4	1	115	1	16	12	0	29	318
07:15 AM	41	58	11	1	111	15	54	10	1	80	10	87	15	1	113	2	26	19	1	48	352
07:30 AM	33	41	7	2	83	12	53	8	3	76	18	91	11	5	125	3	33	29	3	68	352
07:45 AM	21	44	14	0	79	18	61	9	1	89	11	73	7	1	92	3	28	24	1	56	316
Total	125	202	39	3	369	56	223	39	5	323	56	344	37	8	445	9	103	84	5	201	1338
08:00 AM	16	31	12	0	59	15	47	6	2	70	9	91	7	0	107	2	23	22	0	47	283
08:15 AM	16	43	13	1	73	13	41	7	1	62	9	80	2	1	92	1	35	17	4	57	284
08:30 AM	16	40	11	0	67	14	35	7	2	58	5	49	8	1	63	2	12	9	0	23	211
08:45 AM	16	30	18	0	64	15	21	7	1	44	5	37	6	0	48	4	18	10	1	33	189
Total	64	144	54	1	263	57	144	27	6	234	28	257	23	2	310	9	88	58	5	160	967
*** BREAK ***																					
04:00 PM	9	112	36	1	158	21	29	5	1	56	16	51	6	4	77	14	62	19	1	96	387
04:15 PM	15	102	24	1	142	16	27	10	1	54	13	51	2	0	66	10	35	18	3	66	328
04:30 PM	16	109	13	2	140	18	26	23	0	67	14	73	5	2	94	11	98	26	3	138	439
04:45 PM	19	124	31	0	174	9	30	17	0	56	19	67	3	0	89	6	44	22	1	73	392
Total	59	447	104	4	614	64	112	55	2	233	62	242	16	6	326	41	239	85	8	373	1546
05:00 PM	22	144	22	0	188	18	26	21	2	67	13	61	5	0	79	13	54	29	1	97	431
05:15 PM	16	164	34	0	214	21	23	13	2	59	10	62	1	3	76	4	44	21	4	73	422
05:30 PM	16	114	12	0	142	16	14	11	0	41	14	51	4	0	69	10	62	32	2	106	358
05:45 PM	9	85	30	1	125	17	11	11	2	41	12	57	5	1	75	10	61	15	1	87	328
Total	63	507	98	1	669	72	74	56	6	208	49	231	15	4	299	37	221	97	8	363	1539
Grand Total	311	1300	295	9	1915	249	553	177	19	998	195	1074	91	20	1380	96	651	324	26	1097	5390
Apprch %	16.2	67.9	15.4	0.5		24.9	55.4	17.7	1.9		14.1	77.8	6.6	1.4		8.8	59.3	29.5	2.4		
Total %	5.8	24.1	5.5	0.2	35.5	4.6	10.3	3.3	0.4	18.5	3.6	19.9	1.7	0.4	25.6	1.8	12.1	6	0.5	20.4	
Vehicles	299	1278	281	9	1867	239	538	169	19	965	188	1056	87	20	1351	95	629	310	26	1060	5243
% Vehicles	96.1	98.3	95.3	100	97.5	96	97.3	95.5	100	96.7	96.4	98.3	95.6	100	97.9	99	96.6	95.7	100	96.6	97.3
Trucks	8	8	4	0	20	3	11	0	0	14	0	7	3	0	10	1	12	7	0	20	64
% Trucks	2.6	0.6	1.4	0	1	1.2	2	0	0	1.4	0	0.7	3.3	0	0.7	1	1.8	2.2	0	1.8	1.2
Bus	4	14	10	0	28	7	4	8	0	19	7	11	1	0	19	0	10	7	0	17	83
% Bus	1.3	1.1	3.4	0	1.5	2.8	0.7	4.5	0	1.9	3.6	1	1.1	0	1.4	0	1.5	2.2	0	1.5	1.5

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File Name : Spruill Ave @ I 26
Site Code : I 26
Start Date : 8/30/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	Spruill Ave From North				Spruill Ave From South				I 26 From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
07:00 AM	17	37	0	54	59	0	0	59	6	56	3	65	178
07:15 AM	31	60	0	91	50	2	0	52	4	73	1	78	221
07:30 AM	30	50	0	80	32	0	0	32	4	65	0	69	181
07:45 AM	34	50	0	84	46	0	0	46	10	75	1	86	216
Total	112	197	0	309	187	2	0	189	24	269	5	298	796
08:00 AM	54	44	0	98	40	2	0	42	10	57	6	73	213
08:15 AM	40	54	0	94	39	2	0	41	7	48	1	56	191
08:30 AM	37	43	0	80	36	4	0	40	3	51	4	58	178
08:45 AM	29	60	0	89	50	0	0	50	1	56	2	59	198
Total	160	201	0	361	165	8	0	173	21	212	13	246	780
*** BREAK ***													
04:00 PM	100	55	0	155	65	5	0	70	3	38	4	45	270
04:15 PM	63	46	0	109	69	3	0	72	4	33	4	41	222
04:30 PM	81	54	0	135	90	3	0	93	5	39	4	48	276
04:45 PM	77	49	0	126	61	7	0	68	3	33	1	37	231
Total	321	204	0	525	285	18	0	303	15	143	13	171	999
05:00 PM	80	49	0	129	91	1	0	92	5	39	3	47	268
05:15 PM	61	29	0	90	108	4	0	112	10	54	1	65	267
05:30 PM	61	29	0	90	72	4	0	76	1	34	0	35	201
05:45 PM	56	30	0	86	73	5	0	78	5	28	2	35	199
Total	258	137	0	395	344	14	0	358	21	155	6	182	935
Grand Total	851	739	0	1590	981	42	0	1023	81	779	37	897	3510
Apprch %	53.5	46.5	0		95.9	4.1	0		9	86.8	4.1		
Total %	24.2	21.1	0	45.3	27.9	1.2	0	29.1	2.3	22.2	1.1	25.6	
Vehicles	846	724	0	1570	961	41	0	1002	72	774	37	883	3455
% Vehicles	99.4	98	0	98.7	98	97.6	0	97.9	88.9	99.4	100	98.4	98.4
Trucks	1	7	0	8	14	1	0	15	6	2	0	8	31
% Trucks	0.1	0.9	0	0.5	1.4	2.4	0	1.5	7.4	0.3	0	0.9	0.9
Bus	4	8	0	12	6	0	0	6	3	3	0	6	24
% Bus	0.5	1.1	0	0.8	0.6	0	0	0.6	3.7	0.4	0	0.7	0.7

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File Name : Spruill Ave @ Cosgrove Ave
Site Code : COSGROVE
Start Date : 8/23/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	Spruill Ave From North					Cosgrove Ave Ext. From East					Spruill Ave From South					Cosgrove Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	30	101	0	0	131	0	5	1	0	6	2	44	4	0	50	29	35	46	0	110	297
07:15 AM	20	88	1	0	109	0	4	1	0	5	2	54	7	0	63	14	30	59	1	104	281
07:30 AM	38	93	3	0	134	0	11	1	0	12	1	41	12	2	56	16	32	36	0	84	286
07:45 AM	34	114	1	0	149	0	3	4	0	7	0	29	11	1	41	18	40	48	0	106	303
Total	122	396	5	0	523	0	23	7	0	30	5	168	34	3	210	77	137	189	1	404	1167
08:00 AM	25	79	2	0	106	0	9	0	0	9	5	25	1	0	31	13	55	41	1	110	256
08:15 AM	43	59	0	0	102	0	15	2	0	17	2	30	8	0	40	19	27	37	1	84	243
08:30 AM	28	66	1	0	95	0	4	1	0	5	1	31	5	0	37	10	23	29	2	64	201
08:45 AM	29	57	0	1	87	0	4	0	0	4	0	37	8	2	47	18	13	28	1	60	198
Total	125	261	3	1	390	0	32	3	0	35	8	123	22	2	155	60	118	135	5	318	898
*** BREAK ***																					
04:00 PM	52	67	0	0	119	0	36	2	0	38	1	121	29	0	151	14	12	33	0	59	367
04:15 PM	52	30	0	0	82	2	17	1	1	21	1	109	22	0	132	9	4	47	1	61	296
04:30 PM	47	45	0	0	92	1	49	2	0	52	1	98	25	0	124	7	12	56	3	78	346
04:45 PM	53	48	1	0	102	0	17	0	0	17	0	137	26	0	163	6	5	34	1	46	328
Total	204	190	1	0	395	3	119	5	1	128	3	465	102	0	570	36	33	170	5	244	1337
05:00 PM	51	51	0	0	102	0	23	3	0	26	2	136	18	0	156	8	6	37	1	52	336
05:15 PM	37	48	0	1	86	0	19	0	0	19	0	126	16	2	144	7	6	43	4	60	309
05:30 PM	43	52	0	0	95	0	23	1	0	24	1	128	19	0	148	7	8	39	1	55	322
05:45 PM	41	58	0	0	99	2	28	1	0	31	1	122	22	0	145	8	12	37	0	57	332
Total	172	209	0	1	382	2	93	5	0	100	4	512	75	2	593	30	32	156	6	224	1299
Grand Total	623	1056	9	2	1690	5	267	20	1	293	20	1268	233	7	1528	203	320	650	17	1190	4701
Apprch %	36.9	62.5	0.5	0.1		1.7	91.1	6.8	0.3		1.3	83	15.2	0.5		17.1	26.9	54.6	1.4		
Total %	13.3	22.5	0.2	0	35.9	0.1	5.7	0.4	0	6.2	0.4	27	5	0.1	32.5	4.3	6.8	13.8	0.4	25.3	
Vehicles	605	1043	9	2	1659	5	262	17	1	285	20	1257	227	7	1511	187	313	634	17	1151	4606
% Vehicles	97.1	98.8	100	100	98.2	100	98.1	85	100	97.3	100	99.1	97.4	100	98.9	92.1	97.8	97.5	100	96.7	98
Trucks	5	4	0	0	9	0	5	2	0	7	0	6	3	0	9	6	7	7	0	20	45
% Trucks	0.8	0.4	0	0	0.5	0	1.9	10	0	2.4	0	0.5	1.3	0	0.6	3	2.2	1.1	0	1.7	1
Bus	13	9	0	0	22	0	0	1	0	1	0	5	3	0	8	10	0	9	0	19	50
% Bus	2.1	0.9	0	0	1.3	0	0	5	0	0.3	0	0.4	1.3	0	0.5	4.9	0	1.4	0	1.6	1.1

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File Name : Spruill Ave @ Burton Ln-Viaduct Rd
Site Code : BURTON
Start Date : 8/25/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	Spruill Ave From North					Viaduct Rd From East					Spruill Ave From South					Burton Ln From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	74	34	0	114	1	5	18	1	25	59	39	2	0	100	3	80	1	5	89	328
07:15 AM	2	66	43	0	111	3	10	12	0	25	74	56	6	0	136	0	60	2	1	63	335
07:30 AM	0	93	39	0	132	4	7	9	1	21	49	48	6	0	103	5	43	0	0	48	304
07:45 AM	3	70	29	0	102	11	6	14	0	31	46	54	3	0	103	7	42	0	0	49	285
Total	11	303	145	0	459	19	28	53	2	102	228	197	17	0	442	15	225	3	6	249	1252
08:00 AM	4	75	21	0	100	8	6	7	0	21	54	55	4	0	113	4	41	3	2	50	284
08:15 AM	0	69	24	0	93	2	11	5	0	18	41	39	4	0	84	5	37	2	1	45	240
08:30 AM	2	71	32	0	105	8	10	6	0	24	26	47	5	0	78	7	36	6	2	51	258
08:45 AM	0	62	10	0	72	5	9	10	0	24	31	56	4	0	91	4	33	2	0	39	226
Total	6	277	87	0	370	23	36	28	0	87	152	197	17	0	366	20	147	13	5	185	1008
*** BREAK ***																					
04:00 PM	4	68	7	1	80	53	51	77	0	181	11	99	4	0	114	6	10	3	1	20	395
04:15 PM	2	54	10	0	66	35	24	52	1	112	8	100	4	0	112	4	11	2	1	18	308
04:30 PM	4	82	3	1	90	46	49	45	1	141	6	106	6	0	118	5	5	3	3	16	365
04:45 PM	2	65	7	1	75	55	32	35	0	122	11	113	2	0	126	3	7	1	1	12	335
Total	12	269	27	3	311	189	156	209	2	556	36	418	16	0	470	18	33	9	6	66	1403
05:00 PM	1	75	4	0	80	27	36	38	2	103	7	147	9	0	163	4	4	6	2	16	362
05:15 PM	2	61	11	1	75	32	24	33	1	90	5	146	3	0	154	2	5	3	3	13	332
05:30 PM	4	61	8	0	73	25	37	39	1	102	8	95	2	0	105	4	5	2	3	14	294
05:45 PM	1	66	1	0	68	15	30	25	1	71	3	76	5	0	84	3	4	4	1	12	235
Total	8	263	24	1	296	99	127	135	5	366	23	464	19	0	506	13	18	15	9	55	1223
Grand Total	37	1112	283	4	1436	330	347	425	9	1111	439	1276	69	0	1784	66	423	40	26	555	4886
Apprch %	2.6	77.4	19.7	0.3		29.7	31.2	38.3	0.8		24.6	71.5	3.9	0		11.9	76.2	7.2	4.7		
Total %	0.8	22.8	5.8	0.1	29.4	6.8	7.1	8.7	0.2	22.7	9	26.1	1.4	0	36.5	1.4	8.7	0.8	0.5	11.4	
Vehicles	35	1087	279	4	1405	327	343	418	9	1097	437	1254	66	0	1757	61	418	39	26	544	4803
% Vehicles	94.6	97.8	98.6	100	97.8	99.1	98.8	98.4	100	98.7	99.5	98.3	95.7	0	98.5	92.4	98.8	97.5	100	98	98.3
Trucks	0	16	4	0	20	3	4	7	0	14	2	14	3	0	19	2	5	0	0	7	60
% Trucks	0	1.4	1.4	0	1.4	0.9	1.2	1.6	0	1.3	0.5	1.1	4.3	0	1.1	3	1.2	0	0	1.3	1.2
Bus	2	9	0	0	11	0	0	0	0	0	0	8	0	0	8	3	0	1	0	4	23
% Bus	5.4	0.8	0	0	0.8	0	0	0	0	0	0	0.6	0	0	0.4	4.5	0	2.5	0	0.7	0.5

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File Name : spruill ave @ buist ave
Site Code : BUIST
Start Date : 8/23/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	Spruill Ave From North					Buist Ave From East					Spruill Ave From South					Buist Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	21	3	0	24	6	10	10	1	27	18	17	28	0	63	82	22	1	1	106	220
07:15 AM	2	20	4	1	27	2	17	10	1	30	43	20	29	2	94	81	26	1	1	109	260
07:30 AM	2	16	15	1	34	3	33	16	2	54	18	19	27	2	66	83	41	0	2	126	280
07:45 AM	0	23	1	1	25	2	22	13	2	39	11	20	29	2	62	57	28	1	1	87	213
Total	4	80	23	3	110	13	82	49	6	150	90	76	113	6	285	303	117	3	5	428	973
08:00 AM	0	15	2	1	18	1	13	15	2	31	16	14	28	2	60	66	19	0	0	85	194
08:15 AM	1	20	2	0	23	0	10	8	0	18	9	13	22	2	46	60	19	1	0	80	167
08:30 AM	3	20	2	0	25	0	7	9	0	16	12	24	33	0	69	46	14	3	0	63	173
08:45 AM	0	14	0	2	16	1	8	13	0	22	10	15	15	0	40	33	10	1	1	45	123
Total	4	69	6	3	82	2	38	45	2	87	47	66	98	4	215	205	62	5	1	273	657
*** BREAK ***																					
04:00 PM	1	14	1	1	17	0	22	23	1	46	9	37	73	0	119	54	8	2	1	65	247
04:15 PM	0	12	0	0	12	0	20	18	0	38	5	44	84	1	134	23	9	1	2	35	219
04:30 PM	2	20	0	0	22	2	18	15	3	38	13	35	64	1	113	34	10	2	1	47	220
04:45 PM	0	24	2	0	26	0	17	23	0	40	16	44	92	1	153	26	11	4	0	41	260
Total	3	70	3	1	77	2	77	79	4	162	43	160	313	3	519	137	38	9	4	188	946
05:00 PM	1	11	0	1	13	1	24	21	1	47	23	50	113	2	188	46	11	7	0	64	312
05:15 PM	1	15	0	0	16	1	16	18	0	35	23	48	76	0	147	26	18	2	1	47	245
05:30 PM	2	12	0	0	14	1	17	18	0	36	20	43	73	2	138	37	10	5	1	53	241
05:45 PM	1	18	0	0	19	6	13	10	0	29	12	46	62	0	120	24	14	5	0	43	211
Total	5	56	0	1	62	9	70	67	1	147	78	187	324	4	593	133	53	19	2	207	1009
Grand Total	16	275	32	8	331	26	267	240	13	546	258	489	848	17	1612	778	270	36	12	1096	3585
Apprch %	4.8	83.1	9.7	2.4		4.8	48.9	44	2.4		16	30.3	52.6	1.1		71	24.6	3.3	1.1		
Total %	0.4	7.7	0.9	0.2	9.2	0.7	7.4	6.7	0.4	15.2	7.2	13.6	23.7	0.5	45	21.7	7.5	1	0.3	30.6	
Vehicles	15	271	32	8	326	25	265	239	13	542	258	476	841	17	1592	772	268	32	12	1084	3544
% Vehicles	93.8	98.5	100	100	98.5	96.2	99.3	99.6	100	99.3	100	97.3	99.2	100	98.8	99.2	99.3	88.9	100	98.9	98.9
Trucks	0	3	0	0	3	1	0	1	0	2	0	5	5	0	10	0	1	0	0	1	16
% Trucks	0	1.1	0	0	0.9	3.8	0	0.4	0	0.4	0	1	0.6	0	0.6	0	0.4	0	0	0.1	0.4
Bus	1	1	0	0	2	0	2	0	0	2	0	8	2	0	10	6	1	4	0	11	25
% Bus	6.2	0.4	0	0	0.6	0	0.7	0	0	0.4	0	1.6	0.2	0	0.6	0.8	0.4	11.1	0	1	0.7

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File Name : Spruill Ave @ Aragon St
Site Code : ARAGON
Start Date : 8/23/2011
Page No : 1

Groups Printed- Vehicles - Trucks - Bus

	Spruill Ave From North				Aragon St From East				Spruill Ave From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
07:00 AM	109	10	0	119	8	2	0	10	7	55	1	63	192
07:15 AM	100	11	0	111	17	6	1	24	4	75	0	79	214
07:30 AM	86	7	0	93	15	42	1	58	23	46	0	69	220
07:45 AM	109	9	0	118	15	8	0	23	10	50	0	60	201
Total	404	37	0	441	55	58	2	115	44	226	1	271	827
08:00 AM	99	11	0	110	11	8	0	19	5	56	0	61	190
08:15 AM	99	11	0	110	5	4	1	10	3	48	0	51	171
08:30 AM	71	9	0	80	13	4	0	17	2	51	0	53	150
08:45 AM	70	8	0	78	13	9	0	22	3	39	0	42	142
Total	339	39	0	378	42	25	1	68	13	194	0	207	653
*** BREAK ***													
04:00 PM	69	20	0	89	21	14	0	35	10	122	0	132	256
04:15 PM	69	11	0	80	14	7	0	21	6	130	0	136	237
04:30 PM	69	4	0	73	8	5	0	13	7	119	0	126	212
04:45 PM	70	7	0	77	12	7	0	19	2	150	0	152	248
Total	277	42	0	319	55	33	0	88	25	521	0	546	953
05:00 PM	62	12	0	74	57	26	0	83	8	125	0	133	290
05:15 PM	64	1	0	65	6	2	0	8	8	169	0	177	250
05:30 PM	69	5	0	74	4	6	0	10	3	135	0	138	222
05:45 PM	59	3	0	62	6	3	0	9	10	126	0	136	207
Total	254	21	0	275	73	37	0	110	29	555	0	584	969
Grand Total	1274	139	0	1413	225	153	3	381	111	1496	1	1608	3402
Apprch %	90.2	9.8	0		59.1	40.2	0.8		6.9	93	0.1		
Total %	37.4	4.1	0	41.5	6.6	4.5	0.1	11.2	3.3	44	0	47.3	
Vehicles	1252	132	0	1384	201	137	3	341	93	1468	1	1562	3287
% Vehicles	98.3	95	0	97.9	89.3	89.5	100	89.5	83.8	98.1	100	97.1	96.6
Trucks	15	3	0	18	23	2	0	25	6	18	0	24	67
% Trucks	1.2	2.2	0	1.3	10.2	1.3	0	6.6	5.4	1.2	0	1.5	2
Bus	7	4	0	11	1	14	0	15	12	10	0	22	48
% Bus	0.5	2.9	0	0.8	0.4	9.2	0	3.9	10.8	0.7	0	1.4	1.4

Date/Time/Volume/Average Headway Report

South of Cosgrove Ave

HI-Star ID: 3991	Begin: Aug/31/2011 08:00:00 PM	End: Sep/01/2011 08:00:00 PM
Street: Spruill Ave	Lane: north	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 4769
County: Charleston	AADT Factor: 1	AADT Count: 4,769

Date And Time Range	Period Volume	Average Headway (Seconds)
Wed,Aug/31/2011		
[20:00-20:15]	36	24.32
[20:15-20:30]	44	20.00
[20:30-20:45]	37	23.68
[20:45-21:00]	27	32.14
[21:00-21:15]	28	31.03
[21:15-21:30]	37	23.68
[21:30-21:45]	21	40.91
[21:45-22:00]	29	30.00
[22:00-22:15]	43	20.45
[22:15-22:30]	21	40.91
[22:30-22:45]	16	52.94
[22:45-23:00]	17	50.00
[23:00-23:15]	21	40.91
[23:15-23:30]	14	60.00
[23:30-23:45]	15	56.25
[23:45-00:00]	23	37.50
Thu,Sep/01/2011		
[00:00-00:15]	27	32.14
[00:15-00:30]	15	56.25
[00:30-00:45]	13	64.29
[00:45-01:00]	11	75.00
[01:00-01:15]	9	90.00
[01:15-01:30]	6	128.57
[01:30-01:45]	5	150.00
[01:45-02:00]	7	112.50
[02:00-02:15]	8	100.00
[02:15-02:30]	4	180.00
[02:30-02:45]	8	100.00
[02:45-03:00]	3	225.00
[03:00-03:15]	6	128.57
[03:15-03:30]	2	300.00
[03:30-03:45]	4	180.00
[03:45-04:00]	5	150.00
[04:00-04:15]	3	225.00
[04:15-04:30]	7	112.50
[04:30-04:45]	5	150.00
[04:45-05:00]	9	90.00
[05:00-05:15]	3	225.00
[05:15-05:30]	4	180.00
[05:30-05:45]	16	52.94

Date/Time/Volume/Average Headway Report

South of Cosgrove Ave

HI-Star ID: 3991	Begin: Aug/31/2011 08:00:00 PM	End: Sep/01/2011 08:00:00 PM
Street: Spruill Ave	Lane: north	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 4769
County: Charleston	AADT Factor: 1	AADT Count: 4,769

Date And Time Range	Period Volume	Average Headway (Seconds)
Thu,Sep/01/2011		
[05:45-06:00]	17	50.00
[06:00-06:15]	18	47.37
[06:15-06:30]	17	50.00
[06:30-06:45]	19	45.00
[06:45-07:00]	45	19.57
[07:00-07:15]	40	21.95
[07:15-07:30]	82	10.84
[07:30-07:45]	56	15.79
[07:45-08:00]	54	16.36
[08:00-08:15]	50	17.65
[08:15-08:30]	60	14.75
[08:30-08:45]	39	22.50
[08:45-09:00]	52	16.98
[09:00-09:15]	57	15.52
[09:15-09:30]	41	21.43
[09:30-09:45]	50	17.65
[09:45-10:00]	61	14.52
[10:00-10:15]	52	16.98
[10:15-10:30]	45	19.57
[10:30-10:45]	44	20.00
[10:45-11:00]	49	18.00
[11:00-11:15]	76	11.69
[11:15-11:30]	71	12.50
[11:30-11:45]	75	11.84
[11:45-12:00]	81	10.98
[12:00-12:15]	91	9.78
[12:15-12:30]	68	13.04
[12:30-12:45]	67	13.24
[12:45-13:00]	74	12.00
[13:00-13:15]	53	16.67
[13:15-13:30]	82	10.84
[13:30-13:45]	64	13.85
[13:45-14:00]	69	12.86
[14:00-14:15]	71	12.50
[14:15-14:30]	68	13.04
[14:30-14:45]	87	10.23
[14:45-15:00]	70	12.68
[15:00-15:15]	78	11.39
[15:15-15:30]	110	8.11
[15:30-15:45]	142	6.29

Date/Time/Volume/Average Headway Report

South of Cosgrove Ave

HI-Star ID: 3991	Begin: Aug/31/2011 08:00:00 PM	End: Sep/01/2011 08:00:00 PM
Street: Spruill Ave	Lane: north	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 4769
County: Charleston	AADT Factor: 1	AADT Count: 4,769

Date And Time Range	Period Volume	Average Headway (Seconds)
Thu,Sep/01/2011		
[15:45-16:00]	123	7.26
[16:00-16:15]	132	6.77
[16:15-16:30]	126	7.09
[16:30-16:45]	143	6.25
[16:45-17:00]	144	6.21
[17:00-17:15]	159	5.63
[17:15-17:30]	174	5.14
[17:30-17:45]	132	6.77
[17:45-18:00]	98	9.09
[18:00-18:15]	82	10.84
[18:15-18:30]	80	11.11
[18:30-18:45]	65	13.64
[18:45-19:00]	50	17.65
[19:00-19:15]	53	16.67
[19:15-19:30]	42	20.93
[19:30-19:45]	54	16.36
[19:45-20:00]	58	15.25
Aug/31/2011 08:00:00 PM Sep/01/2011 08:00:00 PM	4769	47.82

Date/Time/Volume/Average Headway Report

South of Cosgrove Ave

HI-Star ID: 8516	Begin: Aug/31/2011 10:00:00 AM	End: Sep/01/2011 10:00:00 AM
Street: Spruill Ave	Lane: south	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 5218
County: Charleston	AADT Factor: 1	AADT Count: 5,218

Date And Time Range	Period Volume	Average Headway (Seconds)
Wed,Aug/31/2011		
[10:00-10:15]	52	16.98
[10:15-10:30]	51	17.31
[10:30-10:45]	62	14.29
[10:45-11:00]	55	16.07
[11:00-11:15]	63	14.06
[11:15-11:30]	79	11.25
[11:30-11:45]	66	13.43
[11:45-12:00]	79	11.25
[12:00-12:15]	60	14.75
[12:15-12:30]	83	10.71
[12:30-12:45]	74	12.00
[12:45-13:00]	83	10.71
[13:00-13:15]	77	11.54
[13:15-13:30]	79	11.25
[13:30-13:45]	64	13.85
[13:45-14:00]	67	13.24
[14:00-14:15]	83	10.71
[14:15-14:30]	82	10.84
[14:30-14:45]	82	10.84
[14:45-15:00]	85	10.47
[15:00-15:15]	107	8.33
[15:15-15:30]	93	9.57
[15:30-15:45]	88	10.11
[15:45-16:00]	92	9.68
[16:00-16:15]	102	8.74
[16:15-16:30]	105	8.49
[16:30-16:45]	103	8.65
[16:45-17:00]	105	8.49
[17:00-17:15]	124	7.20
[17:15-17:30]	113	7.89
[17:30-17:45]	117	7.63
[17:45-18:00]	87	10.23
[18:00-18:15]	59	15.00
[18:15-18:30]	69	12.86
[18:30-18:45]	66	13.43
[18:45-19:00]	52	16.98
[19:00-19:15]	44	20.00
[19:15-19:30]	63	14.06
[19:30-19:45]	59	15.00
[19:45-20:00]	40	21.95

Date/Time/Volume/Average Headway Report

South of Cosgrove Ave

HI-Star ID: 8516	Begin: Aug/31/2011 10:00:00 AM	End: Sep/01/2011 10:00:00 AM
Street: Spruill Ave	Lane: south	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 5218
County: Charleston	AADT Factor: 1	AADT Count: 5,218

Date And Time Range	Period Volume	Average Headway (Seconds)
Wed,Aug/31/2011		
[20:00-20:15]	42	20.93
[20:15-20:30]	30	29.03
[20:30-20:45]	34	25.71
[20:45-21:00]	30	29.03
[21:00-21:15]	36	24.32
[21:15-21:30]	24	36.00
[21:30-21:45]	28	31.03
[21:45-22:00]	25	34.62
[22:00-22:15]	19	45.00
[22:15-22:30]	22	39.13
[22:30-22:45]	26	33.33
[22:45-23:00]	17	50.00
[23:00-23:15]	13	64.29
[23:15-23:30]	17	50.00
[23:30-23:45]	10	81.82
[23:45-00:00]	15	56.25
Thu,Sep/01/2011		
[00:00-00:15]	13	64.29
[00:15-00:30]	8	100.00
[00:30-00:45]	13	64.29
[00:45-01:00]	4	180.00
[01:00-01:15]	5	150.00
[01:15-01:30]	6	128.57
[01:30-01:45]	7	112.50
[01:45-02:00]	7	112.50
[02:00-02:15]	3	225.00
[02:15-02:30]	5	150.00
[02:30-02:45]	4	180.00
[02:45-03:00]	4	180.00
[03:00-03:15]	1	450.00
[03:15-03:30]	4	180.00
[03:30-03:45]	7	112.50
[03:45-04:00]	8	100.00
[04:00-04:15]	2	300.00
[04:15-04:30]	7	112.50
[04:30-04:45]	4	180.00
[04:45-05:00]	13	64.29
[05:00-05:15]	11	75.00
[05:15-05:30]	21	40.91
[05:30-05:45]	24	36.00

Date/Time/Volume/Average Headway Report

South of Cosgrove Ave

HI-Star ID: 8516	Begin: Aug/31/2011 10:00:00 AM	End: Sep/01/2011 10:00:00 AM
Street: Spruill Ave	Lane: south	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 5218
County: Charleston	AADT Factor: 1	AADT Count: 5,218

Date And Time Range	Period Volume	Average Headway (Seconds)
Thu,Sep/01/2011		
[05:45-06:00]	43	20.45
[06:00-06:15]	44	20.00
[06:15-06:30]	72	12.33
[06:30-06:45]	98	9.09
[06:45-07:00]	106	8.41
[07:00-07:15]	127	7.03
[07:15-07:30]	106	8.41
[07:30-07:45]	98	9.09
[07:45-08:00]	111	8.04
[08:00-08:15]	130	6.87
[08:15-08:30]	104	8.57
[08:30-08:45]	130	6.87
[08:45-09:00]	95	9.38
[09:00-09:15]	76	11.69
[09:15-09:30]	69	12.86
[09:30-09:45]	62	14.29
[09:45-10:00]	64	13.85
Aug/31/2011 10:00:00 AM Sep/01/2011 10:00:00 AM	5218	48.19

Date/Time/Volume/Average Headway Report

South of Aragon Ave

HI-Star ID: 9445	Begin: Aug/30/2011 12:00:00 AM	End: Aug/31/2011 12:00:00 AM
Street: Spruill Ave	Lane: north	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 4503
County: Charleston	AADT Factor: 1	AADT Count: 4,503

Date And Time Range	Period Volume	Average Headway (Seconds)
Tue,Aug/30/2011		
[00:00-00:15]	22	39.13
[00:15-00:30]	8	100.00
[00:30-00:45]	12	69.23
[00:45-01:00]	11	75.00
[01:00-01:15]	6	128.57
[01:15-01:30]	2	300.00
[01:30-01:45]	6	128.57
[01:45-02:00]	3	225.00
[02:00-02:15]	8	100.00
[02:15-02:30]	2	300.00
[02:30-02:45]	4	180.00
[02:45-03:00]	0	900.00
[03:00-03:15]	2	300.00
[03:15-03:30]	1	450.00
[03:30-03:45]	0	900.00
[03:45-04:00]	3	225.00
[04:00-04:15]	6	128.57
[04:15-04:30]	7	112.50
[04:30-04:45]	5	150.00
[04:45-05:00]	10	81.82
[05:00-05:15]	3	225.00
[05:15-05:30]	5	150.00
[05:30-05:45]	13	64.29
[05:45-06:00]	20	42.86
[06:00-06:15]	30	29.03
[06:15-06:30]	46	19.15
[06:30-06:45]	41	21.43
[06:45-07:00]	60	14.75
[07:00-07:15]	62	14.29
[07:15-07:30]	63	14.06
[07:30-07:45]	69	12.86
[07:45-08:00]	70	12.68
[08:00-08:15]	61	14.52
[08:15-08:30]	51	17.31
[08:30-08:45]	47	18.75
[08:45-09:00]	44	20.00
[09:00-09:15]	50	17.65
[09:15-09:30]	51	17.31
[09:30-09:45]	37	23.68
[09:45-10:00]	48	18.37

Date/Time/Volume/Average Headway Report

South of Aragon Ave

HI-Star ID: 9445	Begin: Aug/30/2011 12:00:00 AM	End: Aug/31/2011 12:00:00 AM
Street: Spruill Ave	Lane: north	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 4503
County: Charleston	AADT Factor: 1	AADT Count: 4,503

Date And Time Range	Period Volume	Average Headway (Seconds)
Tue,Aug/30/2011		
[10:00-10:15]	48	18.37
[10:15-10:30]	42	20.93
[10:30-10:45]	53	16.67
[10:45-11:00]	51	17.31
[11:00-11:15]	53	16.67
[11:15-11:30]	56	15.79
[11:30-11:45]	62	14.29
[11:45-12:00]	58	15.25
[12:00-12:15]	64	13.85
[12:15-12:30]	51	17.31
[12:30-12:45]	48	18.37
[12:45-13:00]	51	17.31
[13:00-13:15]	55	16.07
[13:15-13:30]	44	20.00
[13:30-13:45]	63	14.06
[13:45-14:00]	68	13.04
[14:00-14:15]	56	15.79
[14:15-14:30]	52	16.98
[14:30-14:45]	81	10.98
[14:45-15:00]	65	13.64
[15:00-15:15]	90	9.89
[15:15-15:30]	87	10.23
[15:30-15:45]	112	7.96
[15:45-16:00]	135	6.62
[16:00-16:15]	97	9.18
[16:15-16:30]	137	6.52
[16:30-16:45]	143	6.25
[16:45-17:00]	137	6.52
[17:00-17:15]	154	5.81
[17:15-17:30]	184	4.86
[17:30-17:45]	145	6.16
[17:45-18:00]	144	6.21
[18:00-18:15]	84	10.59
[18:15-18:30]	85	10.47
[18:30-18:45]	61	14.52
[18:45-19:00]	51	17.31
[19:00-19:15]	47	18.75
[19:15-19:30]	47	18.75
[19:30-19:45]	48	18.37
[19:45-20:00]	48	18.37

Date/Time/Volume/Average Headway Report

South of Aragon Ave

HI-Star ID: 9445	Begin: Aug/30/2011 12:00:00 AM	End: Aug/31/2011 12:00:00 AM
Street: Spruill Ave	Lane: north	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 4503
County: Charleston	AADT Factor: 1	AADT Count: 4,503

Date And Time Range	Period Volume	Average Headway (Seconds)
Tue,Aug/30/2011		
[20:00-20:15]	31	28.13
[20:15-20:30]	43	20.45
[20:30-20:45]	22	39.13
[20:45-21:00]	31	28.13
[21:00-21:15]	34	25.71
[21:15-21:30]	28	31.03
[21:30-21:45]	23	37.50
[21:45-22:00]	19	45.00
[22:00-22:15]	22	39.13
[22:15-22:30]	26	33.33
[22:30-22:45]	16	52.94
[22:45-23:00]	7	112.50
[23:00-23:15]	12	69.23
[23:15-23:30]	13	64.29
[23:30-23:45]	14	60.00
[23:45-00:00]	16	52.94
Aug/30/2011 12:00:00 AM Aug/31/2011 12:00:00 AM	4503	72.26

Date/Time/Volume/Average Headway Report

South of Comstock Ave

HI-Star ID: 3992	Begin: Aug/30/2011 12:00:00 AM	End: Aug/31/2011 12:00:00 AM
Street: Spruill Ave	Lane: north	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 5213
County: Charleston	AADT Factor: 1	AADT Count: 5,213

Date And Time Range	Period Volume	Average Headway (Seconds)
Tue,Aug/30/2011		
[00:00-00:15]	5	150.00
[00:15-00:30]	16	52.94
[00:30-00:45]	7	112.50
[00:45-01:00]	7	112.50
[01:00-01:15]	3	225.00
[01:15-01:30]	11	75.00
[01:30-01:45]	7	112.50
[01:45-02:00]	5	150.00
[02:00-02:15]	4	180.00
[02:15-02:30]	10	81.82
[02:30-02:45]	1	450.00
[02:45-03:00]	8	100.00
[03:00-03:15]	3	225.00
[03:15-03:30]	3	225.00
[03:30-03:45]	4	180.00
[03:45-04:00]	2	300.00
[04:00-04:15]	10	81.82
[04:15-04:30]	7	112.50
[04:30-04:45]	6	128.57
[04:45-05:00]	6	128.57
[05:00-05:15]	9	90.00
[05:15-05:30]	21	40.91
[05:30-05:45]	37	23.68
[05:45-06:00]	54	16.36
[06:00-06:15]	84	10.59
[06:15-06:30]	112	7.96
[06:30-06:45]	102	8.74
[06:45-07:00]	135	6.62
[07:00-07:15]	116	7.69
[07:15-07:30]	135	6.62
[07:30-07:45]	90	9.89
[07:45-08:00]	120	7.44
[08:00-08:15]	97	9.18
[08:15-08:30]	80	11.11
[08:30-08:45]	79	11.25
[08:45-09:00]	96	9.28
[09:00-09:15]	73	12.16
[09:15-09:30]	63	14.06
[09:30-09:45]	62	14.29
[09:45-10:00]	71	12.50

Date/Time/Volume/Average Headway Report

South of Comstock Ave

HI-Star ID: 3992	Begin: Aug/30/2011 12:00:00 AM	End: Aug/31/2011 12:00:00 AM
Street: Spruill Ave	Lane: north	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 5213
County: Charleston	AADT Factor: 1	AADT Count: 5,213

Date And Time Range	Period Volume	Average Headway (Seconds)
Tue,Aug/30/2011		
[10:00-10:15]	65	13.64
[10:15-10:30]	51	17.31
[10:30-10:45]	61	14.52
[10:45-11:00]	76	11.69
[11:00-11:15]	60	14.75
[11:15-11:30]	70	12.68
[11:30-11:45]	61	14.52
[11:45-12:00]	79	11.25
[12:00-12:15]	76	11.69
[12:15-12:30]	74	12.00
[12:30-12:45]	70	12.68
[12:45-13:00]	73	12.16
[13:00-13:15]	82	10.84
[13:15-13:30]	78	11.39
[13:30-13:45]	54	16.36
[13:45-14:00]	82	10.84
[14:00-14:15]	68	13.04
[14:15-14:30]	81	10.98
[14:30-14:45]	76	11.69
[14:45-15:00]	71	12.50
[15:00-15:15]	64	13.85
[15:15-15:30]	85	10.47
[15:30-15:45]	96	9.28
[15:45-16:00]	99	9.00
[16:00-16:15]	89	10.00
[16:15-16:30]	109	8.18
[16:30-16:45]	118	7.56
[16:45-17:00]	93	9.57
[17:00-17:15]	119	7.50
[17:15-17:30]	166	5.39
[17:30-17:45]	93	9.57
[17:45-18:00]	106	8.41
[18:00-18:15]	72	12.33
[18:15-18:30]	54	16.36
[18:30-18:45]	41	21.43
[18:45-19:00]	51	17.31
[19:00-19:15]	43	20.45
[19:15-19:30]	46	19.15
[19:30-19:45]	41	21.43
[19:45-20:00]	40	21.95

Date/Time/Volume/Average Headway Report

South of Comstock Ave

HI-Star ID: 3992	Begin: Aug/30/2011 12:00:00 AM	End: Aug/31/2011 12:00:00 AM
Street: Spruill Ave	Lane: north	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 5213
County: Charleston	AADT Factor: 1	AADT Count: 5,213

Date And Time Range	Period Volume	Average Headway (Seconds)
Tue,Aug/30/2011		
[20:00-20:15]	45	19.57
[20:15-20:30]	42	20.93
[20:30-20:45]	39	22.50
[20:45-21:00]	33	26.47
[21:00-21:15]	32	27.27
[21:15-21:30]	26	33.33
[21:30-21:45]	22	39.13
[21:45-22:00]	29	30.00
[22:00-22:15]	22	39.13
[22:15-22:30]	27	32.14
[22:30-22:45]	17	50.00
[22:45-23:00]	15	56.25
[23:00-23:15]	26	33.33
[23:15-23:30]	15	56.25
[23:30-23:45]	19	45.00
[23:45-00:00]	10	81.82
Aug/30/2011 12:00:00 AM Aug/31/2011 12:00:00 AM	5213	48.36

Date/Time/Volume/Average Headway Report

South of Comstock Ave

HI-Star ID: 5016	Begin: Aug/30/2011 12:00:00 AM	End: Aug/31/2011 12:00:00 AM
Street: Spruill Ave	Lane: south	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 4773
County: Charleston	AADT Factor: 1	AADT Count: 4,773

Date And Time Range	Period Volume	Average Headway (Seconds)
Tue,Aug/30/2011		
[00:00-00:15]	15	56.25
[00:15-00:30]	13	64.29
[00:30-00:45]	6	128.57
[00:45-01:00]	5	150.00
[01:00-01:15]	5	150.00
[01:15-01:30]	9	90.00
[01:30-01:45]	6	128.57
[01:45-02:00]	5	150.00
[02:00-02:15]	9	90.00
[02:15-02:30]	2	300.00
[02:30-02:45]	6	128.57
[02:45-03:00]	13	64.29
[03:00-03:15]	2	300.00
[03:15-03:30]	3	225.00
[03:30-03:45]	4	180.00
[03:45-04:00]	7	112.50
[04:00-04:15]	9	90.00
[04:15-04:30]	9	90.00
[04:30-04:45]	5	150.00
[04:45-05:00]	8	100.00
[05:00-05:15]	6	128.57
[05:15-05:30]	19	45.00
[05:30-05:45]	19	45.00
[05:45-06:00]	37	23.68
[06:00-06:15]	34	25.71
[06:15-06:30]	32	27.27
[06:30-06:45]	51	17.31
[06:45-07:00]	68	13.04
[07:00-07:15]	61	14.52
[07:15-07:30]	107	8.33
[07:30-07:45]	89	10.00
[07:45-08:00]	83	10.71
[08:00-08:15]	94	9.47
[08:15-08:30]	87	10.23
[08:30-08:45]	73	12.16
[08:45-09:00]	86	10.34
[09:00-09:15]	63	14.06
[09:15-09:30]	60	14.75
[09:30-09:45]	70	12.68
[09:45-10:00]	51	17.31

Date/Time/Volume/Average Headway Report

South of Comstock Ave

HI-Star ID: 5016	Begin: Aug/30/2011 12:00:00 AM	End: Aug/31/2011 12:00:00 AM
Street: Spruill Ave	Lane: south	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 4773
County: Charleston	AADT Factor: 1	AADT Count: 4,773

Date And Time Range	Period Volume	Average Headway (Seconds)
Tue,Aug/30/2011		
[10:00-10:15]	51	17.31
[10:15-10:30]	73	12.16
[10:30-10:45]	63	14.06
[10:45-11:00]	51	17.31
[11:00-11:15]	48	18.37
[11:15-11:30]	72	12.33
[11:30-11:45]	66	13.43
[11:45-12:00]	79	11.25
[12:00-12:15]	62	14.29
[12:15-12:30]	58	15.25
[12:30-12:45]	62	14.29
[12:45-13:00]	66	13.43
[13:00-13:15]	52	16.98
[13:15-13:30]	72	12.33
[13:30-13:45]	71	12.50
[13:45-14:00]	62	14.29
[14:00-14:15]	57	15.52
[14:15-14:30]	63	14.06
[14:30-14:45]	65	13.64
[14:45-15:00]	92	9.68
[15:00-15:15]	100	8.91
[15:15-15:30]	101	8.82
[15:30-15:45]	145	6.16
[15:45-16:00]	105	8.49
[16:00-16:15]	138	6.47
[16:15-16:30]	109	8.18
[16:30-16:45]	135	6.62
[16:45-17:00]	121	7.38
[17:00-17:15]	134	6.67
[17:15-17:30]	88	10.11
[17:30-17:45]	93	9.57
[17:45-18:00]	88	10.11
[18:00-18:15]	88	10.11
[18:15-18:30]	54	16.36
[18:30-18:45]	58	15.25
[18:45-19:00]	61	14.52
[19:00-19:15]	52	16.98
[19:15-19:30]	49	18.00
[19:30-19:45]	52	16.98
[19:45-20:00]	32	27.27

Date/Time/Volume/Average Headway Report

South of Comstock Ave

HI-Star ID: 5016	Begin: Aug/30/2011 12:00:00 AM	End: Aug/31/2011 12:00:00 AM
Street: Spruill Ave	Lane: south	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 40	Raw Count: 4773
County: Charleston	AADT Factor: 1	AADT Count: 4,773

Date And Time Range	Period Volume	Average Headway (Seconds)
Tue,Aug/30/2011		
[20:00-20:15]	36	24.32
[20:15-20:30]	35	25.00
[20:30-20:45]	25	34.62
[20:45-21:00]	24	36.00
[21:00-21:15]	27	32.14
[21:15-21:30]	22	39.13
[21:30-21:45]	33	26.47
[21:45-22:00]	21	40.91
[22:00-22:15]	21	40.91
[22:15-22:30]	14	60.00
[22:30-22:45]	17	50.00
[22:45-23:00]	21	40.91
[23:00-23:15]	16	52.94
[23:15-23:30]	19	45.00
[23:30-23:45]	12	69.23
[23:45-00:00]	11	75.00
Aug/30/2011 12:00:00 AM Aug/31/2011 12:00:00 AM	4773	46.11

Date/Time/Volume/Average Headway Report

Sourth of Aragon

HI-Star ID: 9444	Begin: Aug/31/2011 10:00:00 AM	End: Sep/01/2011 10:00:00 AM
Street: Spruill Ave	Lane: south	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 30	Raw Count: 4437
County: Charleston	AADT Factor: 1	AADT Count: 4,437

Date And Time Range	Period Volume	Average Headway (Seconds)
Wed,Aug/31/2011		
[10:00-10:15]	43	20.45
[10:15-10:30]	42	20.93
[10:30-10:45]	55	16.07
[10:45-11:00]	40	21.95
[11:00-11:15]	50	17.65
[11:15-11:30]	52	16.98
[11:30-11:45]	46	19.15
[11:45-12:00]	51	17.31
[12:00-12:15]	35	25.00
[12:15-12:30]	79	11.25
[12:30-12:45]	73	12.16
[12:45-13:00]	70	12.68
[13:00-13:15]	46	19.15
[13:15-13:30]	52	16.98
[13:30-13:45]	56	15.79
[13:45-14:00]	61	14.52
[14:00-14:15]	67	13.24
[14:15-14:30]	58	15.25
[14:30-14:45]	85	10.47
[14:45-15:00]	66	13.43
[15:00-15:15]	75	11.84
[15:15-15:30]	77	11.54
[15:30-15:45]	70	12.68
[15:45-16:00]	72	12.33
[16:00-16:15]	89	10.00
[16:15-16:30]	90	9.89
[16:30-16:45]	78	11.39
[16:45-17:00]	83	10.71
[17:00-17:15]	108	8.26
[17:15-17:30]	67	13.24
[17:30-17:45]	86	10.34
[17:45-18:00]	58	15.25
[18:00-18:15]	55	16.07
[18:15-18:30]	55	16.07
[18:30-18:45]	56	15.79
[18:45-19:00]	43	20.45
[19:00-19:15]	36	24.32
[19:15-19:30]	68	13.04
[19:30-19:45]	52	16.98
[19:45-20:00]	38	23.08

Date/Time/Volume/Average Headway Report

Sourth of Aragon

HI-Star ID: 9444	Begin: Aug/31/2011 10:00:00 AM	End: Sep/01/2011 10:00:00 AM
Street: Spruill Ave	Lane: south	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 30	Raw Count: 4437
County: Charleston	AADT Factor: 1	AADT Count: 4,437

Date And Time Range	Period Volume	Average Headway (Seconds)
Wed,Aug/31/2011		
[20:00-20:15]	39	22.50
[20:15-20:30]	26	33.33
[20:30-20:45]	28	31.03
[20:45-21:00]	24	36.00
[21:00-21:15]	31	28.13
[21:15-21:30]	26	33.33
[21:30-21:45]	23	37.50
[21:45-22:00]	18	47.37
[22:00-22:15]	20	42.86
[22:15-22:30]	23	37.50
[22:30-22:45]	22	39.13
[22:45-23:00]	17	50.00
[23:00-23:15]	15	56.25
[23:15-23:30]	13	64.29
[23:30-23:45]	7	112.50
[23:45-00:00]	10	81.82
Thu,Sep/01/2011		
[00:00-00:15]	5	150.00
[00:15-00:30]	4	180.00
[00:30-00:45]	9	90.00
[00:45-01:00]	5	150.00
[01:00-01:15]	5	150.00
[01:15-01:30]	6	128.57
[01:30-01:45]	4	180.00
[01:45-02:00]	2	300.00
[02:00-02:15]	5	150.00
[02:15-02:30]	2	300.00
[02:30-02:45]	6	128.57
[02:45-03:00]	6	128.57
[03:00-03:15]	0	900.00
[03:15-03:30]	4	180.00
[03:30-03:45]	4	180.00
[03:45-04:00]	5	150.00
[04:00-04:15]	5	150.00
[04:15-04:30]	7	112.50
[04:30-04:45]	8	100.00
[04:45-05:00]	11	75.00
[05:00-05:15]	9	90.00
[05:15-05:30]	26	33.33
[05:30-05:45]	31	28.13

Date/Time/Volume/Average Headway Report

Sourth of Aragon

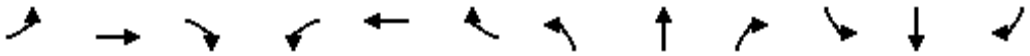
HI-Star ID: 9444	Begin: Aug/31/2011 10:00:00 AM	End: Sep/01/2011 10:00:00 AM
Street: Spruill Ave	Lane: south	Hours: 24.00
State: SC	Oper: PTD	Period: 15
City: North Charleston	Posted: 30	Raw Count: 4437
County: Charleston	AADT Factor: 1	AADT Count: 4,437

Date And Time Range	Period Volume	Average Headway (Seconds)
Thu,Sep/01/2011		
[05:45-06:00]	51	17.31
[06:00-06:15]	49	18.00
[06:15-06:30]	82	10.84
[06:30-06:45]	113	7.89
[06:45-07:00]	93	9.57
[07:00-07:15]	113	7.89
[07:15-07:30]	110	8.11
[07:30-07:45]	96	9.28
[07:45-08:00]	104	8.57
[08:00-08:15]	113	7.89
[08:15-08:30]	84	10.59
[08:30-08:45]	112	7.96
[08:45-09:00]	81	10.98
[09:00-09:15]	70	12.68
[09:15-09:30]	61	14.52
[09:30-09:45]	61	14.52
[09:45-10:00]	50	17.65
Aug/31/2011 10:00:00 AM Sep/01/2011 10:00:00 AM	4437	58.29

Traffic Analysis

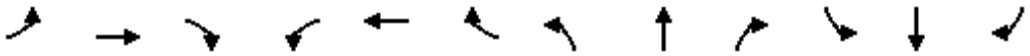
2011 – Existing Conditions

AM Peak Hour



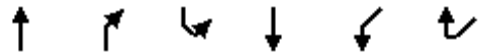
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	225	3	53	28	19	17	197	228	145	303	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00	1.00	0.95	
Frt		1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3279		1652	1739	1478		3287	1478	1652	3273	
Flt Permitted		0.93		0.54	1.00	1.00		0.89	1.00	0.60	1.00	
Satd. Flow (perm)		3059		936	1739	1478		2925	1478	1040	3273	
Peak-hour factor, PHF	0.54	0.70	0.38	0.74	0.70	0.43	0.71	0.88	0.77	0.84	0.81	0.46
Adj. Flow (vph)	28	321	8	72	40	44	24	224	296	173	374	24
RTOR Reduction (vph)	0	4	0	0	0	30	0	0	193	0	12	0
Lane Group Flow (vph)	0	353	0	72	40	14	0	248	103	173	386	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		10.7		10.7	10.7	10.7		12.1	12.1	12.1	12.1	
Effective Green, g (s)		10.7		10.7	10.7	10.7		12.1	12.1	12.1	12.1	
Actuated g/C Ratio		0.31		0.31	0.31	0.31		0.35	0.35	0.35	0.35	
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		941		288	535	454		1017	514	362	1138	
v/s Ratio Prot					0.02						0.12	
v/s Ratio Perm		c0.12		0.08		0.01		0.08	0.07	c0.17		
v/c Ratio		0.37		0.25	0.07	0.03		0.24	0.20	0.48	0.34	
Uniform Delay, d1		9.4		9.0	8.5	8.4		8.1	8.0	8.9	8.4	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3		0.5	0.1	0.0		0.1	0.2	1.0	0.2	
Delay (s)		9.7		9.5	8.6	8.4		8.2	8.2	9.9	8.6	
Level of Service		A		A	A	A		A	A	A	A	
Approach Delay (s)		9.7			9.0			8.2			9.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	34.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



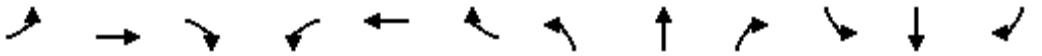
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	19	43	3	10	6	49	170	3	9	384	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt		0.93		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1604		1652	1627		1652	3285		1652	3256	
Flt Permitted		0.92		1.00	1.00		0.49	1.00		0.62	1.00	
Satd. Flow (perm)		1492		1739	1627		846	3285		1075	3256	
Peak-hour factor, PHF	0.55	0.68	0.90	0.38	0.63	0.50	0.72	0.83	0.38	0.56	0.92	0.64
Adj. Flow (vph)	20	28	48	8	16	12	68	205	8	16	417	44
RTOR Reduction (vph)	0	43	0	0	11	0	0	4	0	0	14	0
Lane Group Flow (vph)	0	53	0	8	17	0	68	209	0	16	447	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		3.6		3.6	3.6		18.9	18.9		18.9	18.9	
Effective Green, g (s)		3.6		3.6	3.6		18.9	18.9		18.9	18.9	
Actuated g/C Ratio		0.10		0.10	0.10		0.55	0.55		0.55	0.55	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		156		181	170		463	1800		589	1784	
v/s Ratio Prot					0.01			0.06			c0.14	
v/s Ratio Perm		c0.04		0.00			0.08			0.01		
v/c Ratio		0.34		0.04	0.10		0.15	0.12		0.03	0.25	
Uniform Delay, d1		14.3		13.9	14.0		3.8	3.8		3.6	4.1	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3		0.1	0.3		0.1	0.0		0.0	0.1	
Delay (s)		15.6		14.0	14.2		4.0	3.8		3.6	4.2	
Level of Service		B		B	B		A	A		A	A	
Approach Delay (s)		15.6			14.2			3.8			4.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	34.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	195	30	0	439	22	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.86	0.75	0.92	0.89	0.55	0.92
Adj. Flow (vph)	227	40	0	493	40	0
RTOR Reduction (vph)	0	27	0	0	0	0
Lane Group Flow (vph)	227	13	0	493	40	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	11.1	11.1		11.1	10.0	
Effective Green, g (s)	11.1	11.1		11.1	10.0	
Actuated g/C Ratio	0.34	0.34		0.34	0.30	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1108	496		1108	499	
v/s Ratio Prot	0.07			c0.15	c0.02	
v/s Ratio Perm		0.01				
v/c Ratio	0.20	0.03		0.44	0.08	
Uniform Delay, d1	7.9	7.4		8.6	8.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		0.3	0.1	
Delay (s)	7.9	7.4		8.9	8.3	
Level of Service	A	A		A	A	
Approach Delay (s)	7.9			8.9	8.3	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



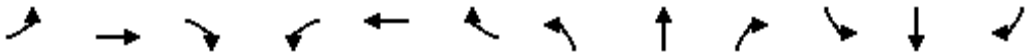
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	103	14	4	36	7	13	53	11	18	80	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		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)	1652	1707		1652	1701		1652	1695		1652	1707	
Flt Permitted	0.82	1.00		0.82	1.00		0.83	1.00		0.83	1.00	
Satd. Flow (perm)	1419	1707		1419	1701		1449	1695		1449	1707	
Peak-hour factor, PHF	1.00	0.72	0.70	1.00	0.75	0.88	0.82	0.88	0.92	0.75	0.91	0.75
Adj. Flow (vph)	4	143	20	4	48	8	16	60	12	24	88	12
RTOR Reduction (vph)	0	15	0	0	6	0	0	9	0	0	9	0
Lane Group Flow (vph)	4	148	0	4	50	0	16	63	0	24	91	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	4.9	4.9		4.9	4.9		4.8	4.8		4.8	4.8	
Effective Green, g (s)	4.9	4.9		4.9	4.9		4.8	4.8		4.8	4.8	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.22	0.22		0.22	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	385		320	384		321	375		321	378	
v/s Ratio Prot		c0.09			0.03			0.04			c0.05	
v/s Ratio Perm	0.00			0.00			0.01			0.02		
v/c Ratio	0.01	0.39		0.01	0.13		0.05	0.17		0.07	0.24	
Uniform Delay, d1	6.5	7.1		6.5	6.7		6.7	6.8		6.7	6.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.6		0.0	0.2		0.1	0.2		0.1	0.3	
Delay (s)	6.5	7.8		6.5	6.9		6.7	7.0		6.8	7.3	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		7.7			6.8			7.0			7.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	21.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	149	138	211	2	0	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3299			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3299			2601
Peak-hour factor, PHF	0.98	0.88	0.81	0.92	0.92	0.81
Adj. Flow (vph)	152	157	260	2	0	578
RTOR Reduction (vph)	0	0	1	0	0	498
Lane Group Flow (vph)	152	157	261	0	0	80
Confl. Peds. (#/hr)	2					
Turn Type	Prot					custom
Protected Phases	5	2	6			
Permitted Phases						4
Actuated Green, G (s)	8.1	24.8	10.7			5.9
Effective Green, g (s)	8.1	24.8	10.7			5.9
Actuated g/C Ratio	0.19	0.58	0.25			0.14
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	313	1918	827			359
v/s Ratio Prot	c0.09	0.05	c0.08			
v/s Ratio Perm						c0.03
v/c Ratio	0.49	0.08	0.32			0.22
Uniform Delay, d1	15.4	3.9	13.0			16.4
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	1.2	0.0	0.2			0.3
Delay (s)	16.6	4.0	13.2			16.7
Level of Service	B	A	B			B
Approach Delay (s)		10.2	13.2		16.7	
Approach LOS		B	B		B	

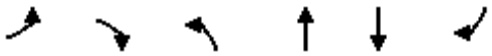
Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	223	56	84	103	9	39	202	125	37	344	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.94		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)	1652	3191		1652	3262		1652	3100		1652	3223	
Flt Permitted	0.66	1.00		0.56	1.00		0.49	1.00		0.52	1.00	
Satd. Flow (perm)	1149	3191		973	3262		859	3100		899	3223	
Peak-hour factor, PHF	0.81	0.91	0.78	0.72	0.78	0.75	0.70	0.86	0.76	0.62	0.92	0.78
Adj. Flow (vph)	48	245	72	117	132	12	56	235	164	60	374	72
RTOR Reduction (vph)	0	50	0	0	8	0	0	107	0	0	40	0
Lane Group Flow (vph)	48	267	0	117	136	0	56	292	0	60	406	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.0	11.0		11.0	11.0		12.3	12.3		12.3	12.3	
Effective Green, g (s)	11.0	11.0		11.0	11.0		12.3	12.3		12.3	12.3	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.35	0.35		0.35	0.35	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	358	994		303	1016		299	1080		313	1123	
v/s Ratio Prot		0.08			0.04			0.09			c0.13	
v/s Ratio Perm	0.04			c0.12			0.07			0.07		
v/c Ratio	0.13	0.27		0.39	0.13		0.19	0.27		0.19	0.36	
Uniform Delay, d1	8.7	9.1		9.5	8.7		8.0	8.3		8.0	8.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		0.8	0.1		0.3	0.1		0.3	0.2	
Delay (s)	8.9	9.3		10.3	8.8		8.3	8.4		8.3	8.8	
Level of Service	A	A		B	A		A	A		A	A	
Approach Delay (s)		9.2			9.5			8.4			8.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	35.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

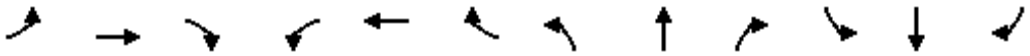


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	269	24	2	187	197	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3204	1478	1652	3303	3303	1478
Flt Permitted	0.95	1.00	0.60	1.00	1.00	1.00
Satd. Flow (perm)	3204	1478	1048	3303	3303	1478
Peak-hour factor, PHF	0.90	0.60	0.25	0.79	0.82	0.82
Adj. Flow (vph)	299	40	8	237	240	137
RTOR Reduction (vph)	0	30	0	0	0	83
Lane Group Flow (vph)	299	10	8	237	240	54
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	8.0	8.0	13.1	13.1	13.1	13.1
Effective Green, g (s)	8.0	8.0	13.1	13.1	13.1	13.1
Actuated g/C Ratio	0.24	0.24	0.40	0.40	0.40	0.40
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	774	357	415	1307	1307	585
v/s Ratio Prot	c0.09			0.07	c0.07	
v/s Ratio Perm		0.01	0.01			0.04
v/c Ratio	0.39	0.03	0.02	0.18	0.18	0.09
Uniform Delay, d1	10.5	9.6	6.1	6.5	6.5	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.0	0.1	0.1	0.1
Delay (s)	10.8	9.6	6.1	6.6	6.6	6.3
Level of Service	B	A	A	A	A	A
Approach Delay (s)	10.7			6.6	6.5	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	396	122	34	168	5	189	137	77	7	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.95		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3303	1478	1652	3290		1652	3125		1652	3303	
Flt Permitted	0.63	1.00	1.00	0.50	1.00		0.74	1.00		0.61	1.00	
Satd. Flow (perm)	1101	3303	1478	872	3290		1287	3125		1055	3303	
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)	5	430	133	37	183	5	205	149	84	8	25	0
RTOR Reduction (vph)	0	0	95	0	4	0	0	60	0	0	0	0
Lane Group Flow (vph)	5	430	38	37	184	0	205	173	0	8	25	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	8.0	8.0	8.0	8.0	8.0		8.2	8.2		8.2	8.2	
Effective Green, g (s)	8.0	8.0	8.0	8.0	8.0		8.2	8.2		8.2	8.2	
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28		0.29	0.29		0.29	0.29	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	312	937	419	247	933		374	909		307	960	
v/s Ratio Prot		c0.13			0.06			0.06			0.01	
v/s Ratio Perm	0.00		0.03	0.04			c0.16			0.01		
v/c Ratio	0.02	0.46	0.09	0.15	0.20		0.55	0.19		0.03	0.03	
Uniform Delay, d1	7.3	8.3	7.4	7.6	7.7		8.4	7.5		7.1	7.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.4	0.1	0.3	0.1		1.6	0.1		0.0	0.0	
Delay (s)	7.3	8.7	7.5	7.8	7.8		10.1	7.6		7.2	7.2	
Level of Service	A	A	A	A	A		B	A		A	A	
Approach Delay (s)		8.4			7.8			8.8			7.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	28.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	117	303	49	82	13	113	76	90	23	80	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.99		1.00	0.90		1.00	0.99	
Flt Protected		1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1737	1478		1688		1652	2964		1652	3264	
Flt Permitted		0.99	1.00		0.84		0.69	1.00		0.60	1.00	
Satd. Flow (perm)		1719	1478		1443		1198	2964		1035	3264	
Peak-hour factor, PHF	0.75	0.71	0.91	0.77	0.62	0.54	0.97	0.95	0.52	0.38	0.87	0.50
Adj. Flow (vph)	4	165	333	64	132	24	116	80	173	61	92	8
RTOR Reduction (vph)	0	0	224	0	11	0	0	118	0	0	5	0
Lane Group Flow (vph)	0	169	109	0	209	0	116	135	0	61	95	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		11.0	11.0		11.0		10.7	10.7		10.7	10.7	
Effective Green, g (s)		11.0	11.0		11.0		10.7	10.7		10.7	10.7	
Actuated g/C Ratio		0.33	0.33		0.33		0.32	0.32		0.32	0.32	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		561	482		471		380	941		329	1036	
v/s Ratio Prot								0.05			0.03	
v/s Ratio Perm		0.10	0.07		c0.14		c0.10			0.06		
v/c Ratio		0.30	0.23		0.44		0.31	0.14		0.19	0.09	
Uniform Delay, d1		8.5	8.3		8.9		8.7	8.2		8.3	8.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.2		0.7		0.5	0.1		0.3	0.0	
Delay (s)		8.8	8.5		9.6		9.1	8.3		8.6	8.1	
Level of Service		A	A		A		A	A		A	A	
Approach Delay (s)		8.6			9.6			8.6			8.3	
Approach LOS		A			A			A			A	

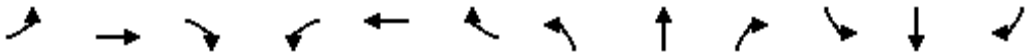
Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	33.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	58	55	226	44	37	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.96		0.96		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1614		3187		1652	3303
Flt Permitted	0.97		1.00		0.52	1.00
Satd. Flow (perm)	1614		3187		904	3303
Peak-hour factor, PHF	0.34	0.81	0.75	0.48	0.84	0.93
Adj. Flow (vph)	171	68	301	92	44	434
RTOR Reduction (vph)	41	0	54	0	0	0
Lane Group Flow (vph)	198	0	339	0	44	434
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	8.7		14.3		14.3	14.3
Effective Green, g (s)	8.7		14.3		14.3	14.3
Actuated g/C Ratio	0.25		0.41		0.41	0.41
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	401		1302		369	1350
v/s Ratio Prot	c0.12		0.11			c0.13
v/s Ratio Perm					0.05	
v/c Ratio	0.49		0.26		0.12	0.32
Uniform Delay, d1	11.3		6.8		6.4	7.0
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.0		0.1		0.1	0.1
Delay (s)	12.2		7.0		6.6	7.2
Level of Service	B		A		A	A
Approach Delay (s)	12.2		7.0			7.1
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	35.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

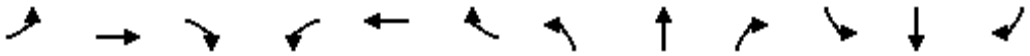
2011 – Existing Conditions

PM Peak Hour



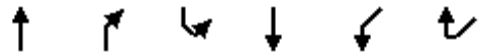
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	21	14	151	141	160	20	512	29	25	283	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00	1.00	0.95	
Frt		0.96		1.00	1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3114		1652	1739	1478		3294	1478	1652	3280	
Flt Permitted		0.82		0.71	1.00	1.00		0.92	1.00	0.41	1.00	
Satd. Flow (perm)		2580		1230	1739	1478		3023	1478	721	3280	
Peak-hour factor, PHF	0.54	0.75	0.70	0.84	0.72	0.73	0.55	0.87	0.66	0.57	0.86	0.56
Adj. Flow (vph)	24	28	20	180	196	219	36	589	44	44	329	16
RTOR Reduction (vph)	0	15	0	0	0	88	0	0	25	0	8	0
Lane Group Flow (vph)	0	57	0	180	196	131	0	625	19	44	337	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		9.5		9.5	9.5	9.5		15.7	15.7	15.7	15.7	
Effective Green, g (s)		9.5		9.5	9.5	9.5		15.7	15.7	15.7	15.7	
Actuated g/C Ratio		0.26		0.26	0.26	0.26		0.42	0.42	0.42	0.42	
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		659		314	444	377		1276	624	304	1384	
v/s Ratio Prot					0.11						0.10	
v/s Ratio Perm		0.02		c0.15		0.09		c0.21	0.01	0.06		
v/c Ratio		0.09		0.57	0.44	0.35		0.49	0.03	0.14	0.24	
Uniform Delay, d1		10.5		12.1	11.6	11.3		7.8	6.3	6.6	6.9	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1		2.5	0.7	0.6		0.3	0.0	0.2	0.1	
Delay (s)		10.6		14.6	12.3	11.9		8.1	6.3	6.8	7.0	
Level of Service		B		B	B	B		A	A	A	A	
Approach Delay (s)		10.6			12.9			8.0			7.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



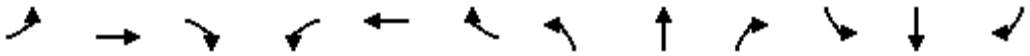
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	35	86	3	32	4	77	583	7	11	217	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt		0.92		1.00	0.99		1.00	1.00		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1591		1652	1717		1652	3289		1652	3230	
Flt Permitted		0.92		0.65	1.00		0.57	1.00		0.38	1.00	
Satd. Flow (perm)		1484		1123	1717		993	3289		666	3230	
Peak-hour factor, PHF	0.56	0.80	0.86	0.39	0.73	1.00	0.84	0.85	0.35	0.69	0.86	0.77
Adj. Flow (vph)	32	44	100	8	44	4	92	686	20	16	252	44
RTOR Reduction (vph)	0	78	0	0	3	0	0	4	0	0	24	0
Lane Group Flow (vph)	0	98	0	8	45	0	92	702	0	16	272	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.0		8.0	8.0		16.4	16.4		16.4	16.4	
Effective Green, g (s)		8.0		8.0	8.0		16.4	16.4		16.4	16.4	
Actuated g/C Ratio		0.22		0.22	0.22		0.45	0.45		0.45	0.45	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		326		247	377		447	1482		300	1455	
v/s Ratio Prot					0.03			c0.21			0.08	
v/s Ratio Perm		c0.07		0.01			0.09			0.02		
v/c Ratio		0.30		0.03	0.12		0.21	0.47		0.05	0.19	
Uniform Delay, d1		11.9		11.2	11.4		6.1	7.0		5.6	6.0	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5		0.1	0.1		0.2	0.2		0.1	0.1	
Delay (s)		12.4		11.2	11.5		6.3	7.2		5.7	6.1	
Level of Service		B		B	B		A	A		A	A	
Approach Delay (s)		12.4			11.5			7.1			6.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	36.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	678	44	0	290	59	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.96	0.65	0.92	0.88	0.87	0.92
Adj. Flow (vph)	706	68	0	330	68	0
RTOR Reduction (vph)	0	43	0	0	0	0
Lane Group Flow (vph)	706	25	0	330	68	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	12.7	12.7		12.7	10.0	
Effective Green, g (s)	12.7	12.7		12.7	10.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.29	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1209	541		1209	476	
v/s Ratio Prot	c0.21			0.10	c0.04	
v/s Ratio Perm		0.02				
v/c Ratio	0.58	0.05		0.27	0.14	
Uniform Delay, d1	8.9	7.1		7.7	9.2	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.0		0.1	0.1	
Delay (s)	9.6	7.1		7.9	9.3	
Level of Service	A	A		A	A	
Approach Delay (s)	9.4			7.9	9.3	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	34.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



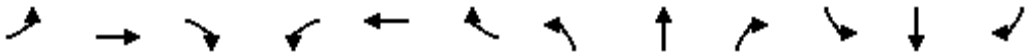
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	86	11	33	137	10	48	86	46	7	31	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.95		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)	1652	1698		1652	1697		1652	1656		1652	1739	
Flt Permitted	0.64	1.00		0.67	1.00		0.72	1.00		0.65	1.00	
Satd. Flow (perm)	1105	1698		1173	1697		1257	1656		1136	1739	
Peak-hour factor, PHF	0.25	0.80	0.55	0.59	0.84	0.32	0.71	0.77	0.88	0.58	0.60	1.00
Adj. Flow (vph)	8	108	20	56	163	31	68	112	52	12	52	0
RTOR Reduction (vph)	0	14	0	0	19	0	0	38	0	0	0	0
Lane Group Flow (vph)	8	114	0	56	175	0	68	126	0	12	52	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	7.8	7.8		7.8	7.8		7.5	7.5		7.5	7.5	
Effective Green, g (s)	7.8	7.8		7.8	7.8		7.5	7.5		7.5	7.5	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	316	485		335	485		345	455		312	478	
v/s Ratio Prot		0.07			c0.10			c0.08			0.03	
v/s Ratio Perm	0.01			0.05			0.05			0.01		
v/c Ratio	0.03	0.23		0.17	0.36		0.20	0.28		0.04	0.11	
Uniform Delay, d1	7.0	7.5		7.3	7.8		7.6	7.8		7.3	7.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2		0.2	0.5		0.3	0.3		0.1	0.1	
Delay (s)	7.0	7.7		7.6	8.2		7.9	8.1		7.3	7.5	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		7.7			8.1			8.0			7.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	27.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	349	370	164	11	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	0.98			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3254			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3254			2601
Peak-hour factor, PHF	0.78	0.87	0.91	0.55	0.92	0.93
Adj. Flow (vph)	447	425	180	20	0	317
RTOR Reduction (vph)	0	0	14	0	0	280
Lane Group Flow (vph)	447	425	186	0	0	37
Confl. Peds. (#/hr)	2					
Turn Type	Prot					custom
Protected Phases	5	2	6			
Permitted Phases						4
Actuated Green, G (s)	14.0	30.0	10.0			5.5
Effective Green, g (s)	14.0	30.0	10.0			5.5
Actuated g/C Ratio	0.29	0.63	0.21			0.12
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	487	2086	685			301
v/s Ratio Prot	c0.27	0.13	c0.06			
v/s Ratio Perm						c0.01
v/c Ratio	0.92	0.20	0.27			0.12
Uniform Delay, d1	16.2	3.7	15.7			18.8
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	22.1	0.0	0.2			0.2
Delay (s)	38.3	3.7	15.9			19.0
Level of Service	D	A	B			B
Approach Delay (s)		21.5	15.9		19.0	
Approach LOS		C	B		B	

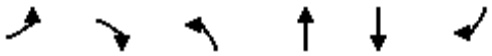
Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	240	34	74	105	66	100	541	73	14	263	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
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	0.94		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3245		1652	3098		1652	3245		1652	3201	
Flt Permitted	0.62	1.00		0.49	1.00		0.53	1.00		0.35	1.00	
Satd. Flow (perm)	1085	3245		859	3098		926	3245		612	3201	
Peak-hour factor, PHF	0.84	0.61	0.65	0.80	0.88	0.79	0.74	0.82	0.83	0.70	0.90	0.74
Adj. Flow (vph)	117	393	52	92	119	84	135	660	88	20	292	76
RTOR Reduction (vph)	0	27	0	0	57	0	0	26	0	0	49	0
Lane Group Flow (vph)	117	418	0	92	146	0	135	722	0	20	319	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.4	11.4		11.4	11.4		12.7	12.7		12.7	12.7	
Effective Green, g (s)	11.4	11.4		11.4	11.4		12.7	12.7		12.7	12.7	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.35	0.35		0.35	0.35	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	343	1025		271	978		326	1142		215	1126	
v/s Ratio Prot		c0.13			0.05			c0.22			0.10	
v/s Ratio Perm	0.11			0.11			0.15			0.03		
v/c Ratio	0.34	0.41		0.34	0.15		0.41	0.63		0.09	0.28	
Uniform Delay, d1	9.5	9.7		9.5	8.9		8.9	9.8		7.8	8.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.3		0.7	0.1		0.9	1.2		0.2	0.1	
Delay (s)	10.1	10.0		10.2	8.9		9.7	10.9		8.0	8.6	
Level of Service	B	A		B	A		A	B		A	A	
Approach Delay (s)		10.0			9.3			10.7			8.5	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	36.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	165	23	15	350	181	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3204	1478	1652	3303	3303	1478
Flt Permitted	0.95	1.00	0.62	1.00	1.00	1.00
Satd. Flow (perm)	3204	1478	1073	3303	3303	1478
Peak-hour factor, PHF	0.76	0.58	0.54	0.81	0.84	0.93
Adj. Flow (vph)	217	40	28	432	215	322
RTOR Reduction (vph)	0	31	0	0	0	188
Lane Group Flow (vph)	217	9	28	432	215	134
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	7.9	7.9	14.2	14.2	14.2	14.2
Effective Green, g (s)	7.9	7.9	14.2	14.2	14.2	14.2
Actuated g/C Ratio	0.23	0.23	0.42	0.42	0.42	0.42
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	742	342	447	1375	1375	615
v/s Ratio Prot	c0.07			c0.13	0.07	
v/s Ratio Perm		0.01	0.03			0.09
v/c Ratio	0.29	0.03	0.06	0.31	0.16	0.22
Uniform Delay, d1	10.8	10.1	6.0	6.7	6.2	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1	0.1	0.1	0.2
Delay (s)	11.0	10.2	6.0	6.8	6.3	6.6
Level of Service	B	B	A	A	A	A
Approach Delay (s)	10.9			6.8	6.4	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	34.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1	192	188	85	497	3	170	29	28	5	108	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3303	1478	1652	3296		1652	3105		1652	3293	
Flt Permitted	0.47	1.00	1.00	0.62	1.00		0.63	1.00		0.70	1.00	
Satd. Flow (perm)	818	3303	1478	1084	3296		1089	3105		1221	3293	
Peak-hour factor, PHF	0.25	0.94	0.89	0.82	0.91	0.38	0.76	0.60	0.88	0.42	0.55	0.25
Adj. Flow (vph)	4	204	211	104	546	8	224	48	32	12	196	4
RTOR Reduction (vph)	0	0	149	0	3	0	0	23	0	0	3	0
Lane Group Flow (vph)	4	204	62	104	551	0	224	57	0	12	197	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	8.5	8.5	8.5	8.5	8.5		8.6	8.6		8.6	8.6	
Effective Green, g (s)	8.5	8.5	8.5	8.5	8.5		8.6	8.6		8.6	8.6	
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29		0.30	0.30		0.30	0.30	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	239	965	432	317	963		322	918		361	973	
v/s Ratio Prot		0.06			c0.17			0.02			0.06	
v/s Ratio Perm	0.00		0.04	0.10			c0.21			0.01		
v/c Ratio	0.02	0.21	0.14	0.33	0.57		0.70	0.06		0.03	0.20	
Uniform Delay, d1	7.3	7.8	7.6	8.1	8.8		9.1	7.4		7.3	7.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.2	0.6	0.8		6.4	0.0		0.0	0.1	
Delay (s)	7.4	7.9	7.8	8.7	9.6		15.5	7.4		7.3	7.8	
Level of Service	A	A	A	A	A		B	A		A	A	
Approach Delay (s)		7.8			9.4			13.4			7.8	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	29.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	50	132	77	75	4	345	177	75	2	70	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.99		1.00	0.95		1.00	0.99	
Flt Protected		0.99	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1715	1478		1689		1652	3148		1652	3265	
Flt Permitted		0.86	1.00		0.80		0.69	1.00		0.57	1.00	
Satd. Flow (perm)		1492	1478		1385		1193	3148		998	3265	
Peak-hour factor, PHF	0.54	0.69	0.72	0.84	0.78	0.50	0.76	0.89	0.82	0.25	0.73	0.50
Adj. Flow (vph)	28	72	183	92	96	8	454	199	91	8	96	8
RTOR Reduction (vph)	0	0	140	0	5	0	0	50	0	0	4	0
Lane Group Flow (vph)	0	100	43	0	191	0	454	240	0	8	100	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		9.1	9.1		9.1		17.2	17.2		17.2	17.2	
Effective Green, g (s)		9.1	9.1		9.1		17.2	17.2		17.2	17.2	
Actuated g/C Ratio		0.24	0.24		0.24		0.45	0.45		0.45	0.45	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		354	351		329		536	1414		448	1466	
v/s Ratio Prot								0.08			0.03	
v/s Ratio Perm		0.07	0.03		c0.14		c0.38			0.01		
v/c Ratio		0.28	0.12		0.58		0.85	0.17		0.02	0.07	
Uniform Delay, d1		11.9	11.5		12.9		9.4	6.3		5.9	6.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.2		2.6		11.8	0.1		0.0	0.0	
Delay (s)		12.4	11.6		15.5		21.2	6.3		5.9	6.0	
Level of Service		B	B		B		C	A		A	A	
Approach Delay (s)		11.9			15.5			15.4			6.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

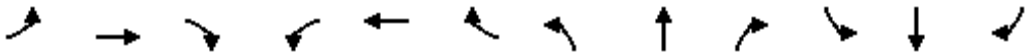
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	40	83	563	25	24	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.91		0.99		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1552		3281		1652	3303
Flt Permitted	0.98		1.00		0.38	1.00
Satd. Flow (perm)	1552		3281		652	3303
Peak-hour factor, PHF	0.39	0.36	0.83	0.78	0.50	0.95
Adj. Flow (vph)	103	231	678	32	48	279
RTOR Reduction (vph)	57	0	8	0	0	0
Lane Group Flow (vph)	277	0	702	0	48	279
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	11.8		13.7		13.7	13.7
Effective Green, g (s)	11.8		13.7		13.7	13.7
Actuated g/C Ratio	0.31		0.37		0.37	0.37
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	488		1199		238	1207
v/s Ratio Prot	c0.18		c0.21			0.08
v/s Ratio Perm					0.07	
v/c Ratio	0.57		0.59		0.20	0.23
Uniform Delay, d1	10.7		9.6		8.2	8.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.5		0.7		0.4	0.1
Delay (s)	12.2		10.3		8.6	8.3
Level of Service	B		B		A	A
Approach Delay (s)	12.2		10.3			8.4
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	37.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2011

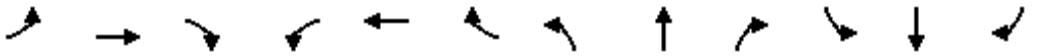
4-Lane Scenario

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	225	3	53	28	19	17	197	228	145	303	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00		0.95	
Frt		1.00		1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00		0.95	1.00	1.00		1.00	1.00		0.99	
Satd. Flow (prot)		3279		1652	1739	1478		3287	1478		3233	
Flt Permitted		0.93		0.54	1.00	1.00		0.87	1.00		0.78	
Satd. Flow (perm)		3059		936	1739	1478		2858	1478		2573	
Peak-hour factor, PHF	0.54	0.70	0.38	0.74	0.70	0.43	0.71	0.88	0.77	0.84	0.81	0.46
Adj. Flow (vph)	28	321	8	72	40	44	24	224	296	173	374	24
RTOR Reduction (vph)	0	4	0	0	0	31	0	0	190	0	8	0
Lane Group Flow (vph)	0	353	0	72	40	13	0	248	106	0	563	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		10.7		10.7	10.7	10.7		12.6	12.6		12.6	
Effective Green, g (s)		10.7		10.7	10.7	10.7		12.6	12.6		12.6	
Actuated g/C Ratio		0.30		0.30	0.30	0.30		0.36	0.36		0.36	
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)		927		284	527	448		1020	528		918	
v/s Ratio Prot					0.02							
v/s Ratio Perm		c0.12		0.08		0.01		0.09	0.07		c0.22	
v/c Ratio		0.38		0.25	0.08	0.03		0.24	0.20		0.61	
Uniform Delay, d1		9.7		9.3	8.8	8.6		8.0	7.9		9.3	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.3		0.5	0.1	0.0		0.1	0.2		1.2	
Delay (s)		10.0		9.8	8.8	8.7		8.1	8.0		10.6	
Level of Service		A		A	A	A		A	A		B	
Approach Delay (s)		10.0			9.2			8.1			10.6	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	35.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

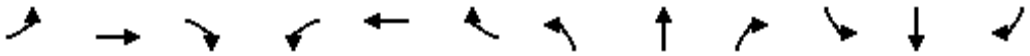


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	19	43	3	10	6	49	170	3	9	384	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frt		0.93		1.00	0.94			1.00			0.99	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1604		1652	1627			3250			3252	
Flt Permitted		0.92		1.00	1.00			0.79			0.94	
Satd. Flow (perm)		1492		1739	1627			2594			3064	
Peak-hour factor, PHF	0.55	0.68	0.90	0.38	0.63	0.50	0.72	0.83	0.38	0.56	0.92	0.64
Adj. Flow (vph)	20	28	48	8	16	12	68	205	8	16	417	44
RTOR Reduction (vph)	0	43	0	0	11	0	0	4	0	0	13	0
Lane Group Flow (vph)	0	53	0	8	17	0	0	277	0	0	464	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		3.5		3.5	3.5			19.1			19.1	
Effective Green, g (s)		3.5		3.5	3.5			19.1			19.1	
Actuated g/C Ratio		0.10		0.10	0.10			0.55			0.55	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		151		176	165			1432			1691	
v/s Ratio Prot					0.01							
v/s Ratio Perm		c0.04		0.00				0.11			c0.15	
v/c Ratio		0.35		0.05	0.10			0.19			0.27	
Uniform Delay, d1		14.5		14.0	14.1			3.9			4.1	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		1.4		0.1	0.3			0.1			0.1	
Delay (s)		15.9		14.1	14.4			4.0			4.2	
Level of Service		B		B	B			A			A	
Approach Delay (s)		15.9			14.3			4.0			4.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	34.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	195	30	0	439	22	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.86	0.75	0.92	0.89	0.55	0.92
Adj. Flow (vph)	227	40	0	493	40	0
RTOR Reduction (vph)	0	27	0	0	0	0
Lane Group Flow (vph)	227	13	0	493	40	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	11.1	11.1		11.1	10.0	
Effective Green, g (s)	11.1	11.1		11.1	10.0	
Actuated g/C Ratio	0.34	0.34		0.34	0.30	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1108	496		1108	499	
v/s Ratio Prot	0.07			c0.15	c0.02	
v/s Ratio Perm		0.01				
v/c Ratio	0.20	0.03		0.44	0.08	
Uniform Delay, d1	7.9	7.4		8.6	8.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		0.3	0.1	
Delay (s)	7.9	7.4		8.9	8.3	
Level of Service	A	A		A	A	
Approach Delay (s)	7.9			8.9	8.3	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



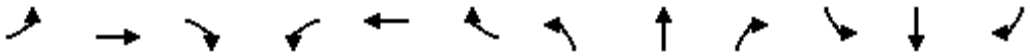
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	103	14	4	36	7	13	53	11	18	80	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		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)	1652	1707		1652	1701		1652	1695		1652	1707	
Flt Permitted	0.82	1.00		0.82	1.00		0.83	1.00		0.83	1.00	
Satd. Flow (perm)	1419	1707		1419	1701		1449	1695		1449	1707	
Peak-hour factor, PHF	1.00	0.72	0.70	1.00	0.75	0.88	0.82	0.88	0.92	0.75	0.91	0.75
Adj. Flow (vph)	4	143	20	4	48	8	16	60	12	24	88	12
RTOR Reduction (vph)	0	15	0	0	6	0	0	9	0	0	9	0
Lane Group Flow (vph)	4	148	0	4	50	0	16	63	0	24	91	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	4.9	4.9		4.9	4.9		4.8	4.8		4.8	4.8	
Effective Green, g (s)	4.9	4.9		4.9	4.9		4.8	4.8		4.8	4.8	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.22	0.22		0.22	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	385		320	384		321	375		321	378	
v/s Ratio Prot		c0.09			0.03			0.04			c0.05	
v/s Ratio Perm	0.00			0.00			0.01			0.02		
v/c Ratio	0.01	0.39		0.01	0.13		0.05	0.17		0.07	0.24	
Uniform Delay, d1	6.5	7.1		6.5	6.7		6.7	6.8		6.7	6.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.6		0.0	0.2		0.1	0.2		0.1	0.3	
Delay (s)	6.5	7.8		6.5	6.9		6.7	7.0		6.8	7.3	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		7.7			6.8			7.0			7.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	21.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	149	138	211	2	0	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3299			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3299			2601
Peak-hour factor, PHF	0.98	0.88	0.81	0.92	0.92	0.81
Adj. Flow (vph)	152	157	260	2	0	578
RTOR Reduction (vph)	0	0	1	0	0	498
Lane Group Flow (vph)	152	157	261	0	0	80
Confl. Peds. (#/hr)	2					
Turn Type	Prot					custom
Protected Phases	5	2	6			
Permitted Phases						4
Actuated Green, G (s)	8.1	24.8	10.7			5.9
Effective Green, g (s)	8.1	24.8	10.7			5.9
Actuated g/C Ratio	0.19	0.58	0.25			0.14
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	313	1918	827			359
v/s Ratio Prot	c0.09	0.05	c0.08			
v/s Ratio Perm						c0.03
v/c Ratio	0.49	0.08	0.32			0.22
Uniform Delay, d1	15.4	3.9	13.0			16.4
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	1.2	0.0	0.2			0.3
Delay (s)	16.6	4.0	13.2			16.7
Level of Service	B	A	B			B
Approach Delay (s)		10.2	13.2		16.7	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

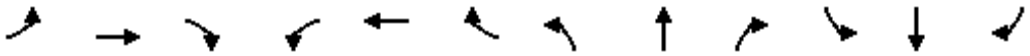


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	223	56	84	103	9	39	202	125	37	344	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.97		1.00	0.99			0.95			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1652	3191		1652	3262			3106			3214	
Flt Permitted	0.66	1.00		0.56	1.00			0.83			0.84	
Satd. Flow (perm)	1149	3191		973	3262			2594			2717	
Peak-hour factor, PHF	0.81	0.91	0.78	0.72	0.78	0.75	0.70	0.86	0.76	0.62	0.92	0.78
Adj. Flow (vph)	48	245	72	117	132	12	56	235	164	60	374	72
RTOR Reduction (vph)	0	50	0	0	8	0	0	105	0	0	33	0
Lane Group Flow (vph)	48	267	0	117	136	0	0	350	0	0	473	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.1	11.1		11.1	11.1			12.9			12.9	
Effective Green, g (s)	11.1	11.1		11.1	11.1			12.9			12.9	
Actuated g/C Ratio	0.31	0.31		0.31	0.31			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	354	984		300	1006			930			974	
v/s Ratio Prot		0.08			0.04							
v/s Ratio Perm	0.04			c0.12				0.13			c0.17	
v/c Ratio	0.14	0.27		0.39	0.13			0.38			0.49	
Uniform Delay, d1	9.0	9.4		9.8	9.0			8.6			9.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1		0.8	0.1			0.3			0.4	
Delay (s)	9.2	9.5		10.6	9.0			8.8			9.4	
Level of Service	A	A		B	A			A			A	
Approach Delay (s)		9.5			9.8			8.8			9.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	36.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	396	122	34	168	5	189	137	77	7	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			6.0		6.0	6.0	
Lane Util. Factor		0.95	1.00		0.95			0.95		1.00	0.95	
Frt		1.00	0.85		1.00			0.97		1.00	1.00	
Flt Protected		1.00	1.00		0.99			0.98		0.95	1.00	
Satd. Flow (prot)		3301	1478		3265			3135		1652	3303	
Flt Permitted		0.95	1.00		0.83			0.82		0.50	1.00	
Satd. Flow (perm)		3138	1478		2721			2628		865	3303	
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)	5	430	133	37	183	5	205	149	84	8	25	0
RTOR Reduction (vph)	0	0	89	0	3	0	0	53	0	0	0	0
Lane Group Flow (vph)	0	435	44	0	222	0	0	385	0	8	25	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)		11.4	11.4		11.4			11.3		11.3	11.3	
Effective Green, g (s)		11.4	11.4		11.4			11.3		11.3	11.3	
Actuated g/C Ratio		0.33	0.33		0.33			0.33		0.33	0.33	
Clearance Time (s)		6.0	6.0		6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		1031	486		894			856		282	1076	
v/s Ratio Prot											0.01	
v/s Ratio Perm		c0.14	0.03		0.08			c0.15		0.01		
v/c Ratio		0.42	0.09		0.25			0.45		0.03	0.02	
Uniform Delay, d1		9.1	8.1		8.5			9.2		8.0	8.0	
Progression Factor		1.00	1.00		1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.1		0.1			0.4		0.0	0.0	
Delay (s)		9.4	8.1		8.7			9.6		8.0	8.0	
Level of Service		A	A		A			A		A	A	
Approach Delay (s)		9.1			8.7			9.6			8.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	34.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

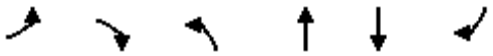


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	117	303	49	82	13	113	76	90	23	80	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			6.0			6.0	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frt		1.00	0.85		0.99			0.93			0.99	
Flt Protected		1.00	1.00		0.99			0.98			0.98	
Satd. Flow (prot)		1737	1478		1688			3023			3218	
Flt Permitted		0.99	1.00		0.84			0.81			0.72	
Satd. Flow (perm)		1719	1478		1443			2491			2377	
Peak-hour factor, PHF	0.75	0.71	0.91	0.77	0.62	0.54	0.97	0.95	0.52	0.38	0.87	0.50
Adj. Flow (vph)	4	165	333	64	132	24	116	80	173	61	92	8
RTOR Reduction (vph)	0	0	224	0	11	0	0	118	0	0	5	0
Lane Group Flow (vph)	0	169	109	0	209	0	0	251	0	0	156	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		11.0	11.0		11.0			10.6			10.6	
Effective Green, g (s)		11.0	11.0		11.0			10.6			10.6	
Actuated g/C Ratio		0.33	0.33		0.33			0.32			0.32	
Clearance Time (s)		6.0	6.0		6.0			6.0			6.0	
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)		563	484		472			786			750	
v/s Ratio Prot												
v/s Ratio Perm		0.10	0.07		c0.14			c0.10			0.07	
v/c Ratio		0.30	0.23		0.44			0.32			0.21	
Uniform Delay, d1		8.4	8.2		8.9			8.8			8.4	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		0.3	0.2		0.7			0.2			0.1	
Delay (s)		8.7	8.4		9.5			9.0			8.6	
Level of Service		A	A		A			A			A	
Approach Delay (s)		8.5			9.5			9.0			8.6	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	33.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	58	55	226	44	37	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frt	0.96		0.96			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1614		3187			3288
Flt Permitted	0.97		1.00			0.88
Satd. Flow (perm)	1614		3187			2919
Peak-hour factor, PHF	0.34	0.81	0.75	0.48	0.84	0.93
Adj. Flow (vph)	171	68	301	92	44	434
RTOR Reduction (vph)	41	0	54	0	0	0
Lane Group Flow (vph)	198	0	339	0	0	478
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	8.8		14.7			14.7
Effective Green, g (s)	8.8		14.7			14.7
Actuated g/C Ratio	0.25		0.41			0.41
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	400		1320			1209
v/s Ratio Prot	c0.12		0.11			
v/s Ratio Perm						c0.16
v/c Ratio	0.49		0.26			0.40
Uniform Delay, d1	11.4		6.8			7.3
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	1.0		0.1			0.2
Delay (s)	12.4		6.9			7.5
Level of Service	B		A			A
Approach Delay (s)	12.4		6.9			7.5
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	35.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



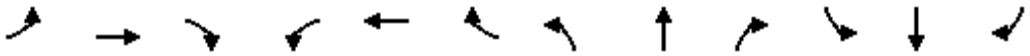
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	269	24	2	187	197	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00		0.95	0.95	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3204	1478		3298	3303	1478
Flt Permitted	0.95	1.00		0.94	1.00	1.00
Satd. Flow (perm)	3204	1478		3108	3303	1478
Peak-hour factor, PHF	0.90	0.60	0.25	0.79	0.82	0.82
Adj. Flow (vph)	299	40	8	237	240	137
RTOR Reduction (vph)	0	30	0	0	0	83
Lane Group Flow (vph)	299	10	0	245	240	54
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	8.0	8.0		13.1	13.1	13.1
Effective Green, g (s)	8.0	8.0		13.1	13.1	13.1
Actuated g/C Ratio	0.24	0.24		0.40	0.40	0.40
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	774	357		1230	1307	585
v/s Ratio Prot	c0.09				0.07	
v/s Ratio Perm		0.01		c0.08		0.04
v/c Ratio	0.39	0.03		0.20	0.18	0.09
Uniform Delay, d1	10.5	9.6		6.6	6.5	6.3
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0		0.1	0.1	0.1
Delay (s)	10.8	9.6		6.6	6.6	6.3
Level of Service	B	A		A	A	A
Approach Delay (s)	10.7			6.6	6.5	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2011

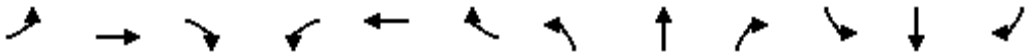
4-Lane Scenario

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	21	14	151	141	160	20	512	29	25	283	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00		0.95	
Frt		0.96		1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected		0.98		0.95	1.00	1.00		1.00	1.00		0.99	
Satd. Flow (prot)		3114		1652	1739	1478		3294	1478		3264	
Flt Permitted		0.82		0.71	1.00	1.00		0.91	1.00		0.84	
Satd. Flow (perm)		2580		1230	1739	1478		3011	1478		2750	
Peak-hour factor, PHF	0.54	0.75	0.70	0.84	0.72	0.73	0.55	0.87	0.66	0.57	0.86	0.56
Adj. Flow (vph)	24	28	20	180	196	219	36	589	44	44	329	16
RTOR Reduction (vph)	0	15	0	0	0	88	0	0	25	0	7	0
Lane Group Flow (vph)	0	57	0	180	196	131	0	625	19	0	382	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		9.5		9.5	9.5	9.5		15.8	15.8		15.8	
Effective Green, g (s)		9.5		9.5	9.5	9.5		15.8	15.8		15.8	
Actuated g/C Ratio		0.25		0.25	0.25	0.25		0.42	0.42		0.42	
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)		657		313	443	376		1275	626		1165	
v/s Ratio Prot					0.11							
v/s Ratio Perm		0.02		c0.15		0.09		c0.21	0.01		0.14	
v/c Ratio		0.09		0.58	0.44	0.35		0.49	0.03		0.33	
Uniform Delay, d1		10.6		12.1	11.7	11.4		7.8	6.3		7.2	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.1		2.5	0.7	0.6		0.3	0.0		0.2	
Delay (s)		10.7		14.7	12.4	11.9		8.1	6.3		7.4	
Level of Service		B		B	B	B		A	A		A	
Approach Delay (s)		10.7			12.9			8.0			7.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

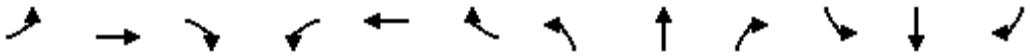


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	35	86	3	32	4	77	583	7	11	217	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frt		0.92		1.00	0.99			1.00			0.98	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1591		1652	1717			3272			3225	
Flt Permitted		0.92		0.65	1.00			0.86			0.90	
Satd. Flow (perm)		1484		1123	1717			2846			2907	
Peak-hour factor, PHF	0.56	0.80	0.86	0.39	0.73	1.00	0.84	0.85	0.35	0.69	0.86	0.77
Adj. Flow (vph)	32	44	100	8	44	4	92	686	20	16	252	44
RTOR Reduction (vph)	0	78	0	0	3	0	0	4	0	0	24	0
Lane Group Flow (vph)	0	98	0	8	45	0	0	794	0	0	288	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.0		8.0	8.0			16.9			16.9	
Effective Green, g (s)		8.0		8.0	8.0			16.9			16.9	
Actuated g/C Ratio		0.22		0.22	0.22			0.46			0.46	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		322		243	372			1303			1331	
v/s Ratio Prot					0.03							
v/s Ratio Perm		c0.07		0.01				c0.28			0.10	
v/c Ratio		0.30		0.03	0.12			0.61			0.22	
Uniform Delay, d1		12.1		11.4	11.6			7.5			6.0	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		0.5		0.1	0.1			0.8			0.1	
Delay (s)		12.6		11.5	11.8			8.3			6.1	
Level of Service		B		B	B			A			A	
Approach Delay (s)		12.6			11.7			8.3			6.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	36.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	678	44	0	290	59	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.96	0.65	0.92	0.88	0.87	0.92
Adj. Flow (vph)	706	68	0	330	68	0
RTOR Reduction (vph)	0	43	0	0	0	0
Lane Group Flow (vph)	706	25	0	330	68	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	12.7	12.7		12.7	10.0	
Effective Green, g (s)	12.7	12.7		12.7	10.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.29	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1209	541		1209	476	
v/s Ratio Prot	c0.21			0.10	c0.04	
v/s Ratio Perm		0.02				
v/c Ratio	0.58	0.05		0.27	0.14	
Uniform Delay, d1	8.9	7.1		7.7	9.2	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.0		0.1	0.1	
Delay (s)	9.6	7.1		7.9	9.3	
Level of Service	A	A		A	A	
Approach Delay (s)	9.4			7.9	9.3	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	34.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



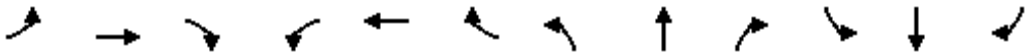
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	86	11	33	137	10	48	86	46	7	31	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.95		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)	1652	1698		1652	1697		1652	1656		1652	1739	
Flt Permitted	0.64	1.00		0.67	1.00		0.72	1.00		0.65	1.00	
Satd. Flow (perm)	1105	1698		1173	1697		1257	1656		1136	1739	
Peak-hour factor, PHF	0.25	0.80	0.55	0.59	0.84	0.32	0.71	0.77	0.88	0.58	0.60	1.00
Adj. Flow (vph)	8	108	20	56	163	31	68	112	52	12	52	0
RTOR Reduction (vph)	0	14	0	0	19	0	0	38	0	0	0	0
Lane Group Flow (vph)	8	114	0	56	175	0	68	126	0	12	52	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	7.8	7.8		7.8	7.8		7.5	7.5		7.5	7.5	
Effective Green, g (s)	7.8	7.8		7.8	7.8		7.5	7.5		7.5	7.5	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	316	485		335	485		345	455		312	478	
v/s Ratio Prot		0.07			c0.10			c0.08			0.03	
v/s Ratio Perm	0.01			0.05			0.05			0.01		
v/c Ratio	0.03	0.23		0.17	0.36		0.20	0.28		0.04	0.11	
Uniform Delay, d1	7.0	7.5		7.3	7.8		7.6	7.8		7.3	7.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2		0.2	0.5		0.3	0.3		0.1	0.1	
Delay (s)	7.0	7.7		7.6	8.2		7.9	8.1		7.3	7.5	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		7.7			8.1			8.0			7.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	27.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	349	370	164	11	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	0.98			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3254			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3254			2601
Peak-hour factor, PHF	0.78	0.87	0.91	0.55	0.92	0.93
Adj. Flow (vph)	447	425	180	20	0	317
RTOR Reduction (vph)	0	0	14	0	0	280
Lane Group Flow (vph)	447	425	186	0	0	37
Confl. Peds. (#/hr)	2					
Turn Type	Prot					custom
Protected Phases	5	2	6			
Permitted Phases						4
Actuated Green, G (s)	14.0	30.0	10.0			5.5
Effective Green, g (s)	14.0	30.0	10.0			5.5
Actuated g/C Ratio	0.29	0.63	0.21			0.12
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	487	2086	685			301
v/s Ratio Prot	c0.27	0.13	c0.06			
v/s Ratio Perm						c0.01
v/c Ratio	0.92	0.20	0.27			0.12
Uniform Delay, d1	16.2	3.7	15.7			18.8
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	22.1	0.0	0.2			0.2
Delay (s)	38.3	3.7	15.9			19.0
Level of Service	D	A	B			B
Approach Delay (s)		21.5	15.9		19.0	
Approach LOS		C	B		B	

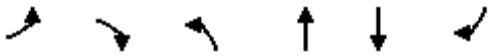
Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	240	34	74	105	66	100	541	73	14	263	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.98		1.00	0.94			0.99			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1652	3245		1652	3098			3229			3198	
Flt Permitted	0.62	1.00		0.49	1.00			0.81			0.89	
Satd. Flow (perm)	1085	3245		859	3098			2641			2844	
Peak-hour factor, PHF	0.84	0.61	0.65	0.80	0.88	0.79	0.74	0.82	0.83	0.70	0.90	0.74
Adj. Flow (vph)	117	393	52	92	119	84	135	660	88	20	292	76
RTOR Reduction (vph)	0	24	0	0	60	0	0	18	0	0	44	0
Lane Group Flow (vph)	117	421	0	92	143	0	0	865	0	0	344	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.8	11.8		11.8	11.8			17.4			17.4	
Effective Green, g (s)	11.8	11.8		11.8	11.8			17.4			17.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.42			0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	311	929		246	887			1115			1201	
v/s Ratio Prot		c0.13			0.05							
v/s Ratio Perm	0.11			0.11				c0.33			0.12	
v/c Ratio	0.38	0.45		0.37	0.16			0.78			0.29	
Uniform Delay, d1	11.8	12.1		11.7	11.0			10.2			7.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.8	0.4		1.0	0.1			3.4			0.1	
Delay (s)	12.5	12.4		12.7	11.1			13.7			8.0	
Level of Service	B	B		B	B			B			A	
Approach Delay (s)		12.4			11.6			13.7			8.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

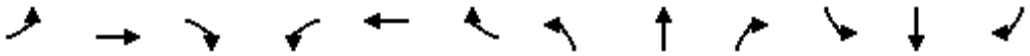


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	165	23	15	350	181	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00		0.95	0.95	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3204	1478		3293	3303	1478
Flt Permitted	0.95	1.00		0.93	1.00	1.00
Satd. Flow (perm)	3204	1478		3057	3303	1478
Peak-hour factor, PHF	0.76	0.58	0.54	0.81	0.84	0.93
Adj. Flow (vph)	217	40	28	432	215	322
RTOR Reduction (vph)	0	31	0	0	0	187
Lane Group Flow (vph)	217	9	0	460	215	135
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	7.9	7.9		14.3	14.3	14.3
Effective Green, g (s)	7.9	7.9		14.3	14.3	14.3
Actuated g/C Ratio	0.23	0.23		0.42	0.42	0.42
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	740	341		1278	1381	618
v/s Ratio Prot	c0.07				0.07	
v/s Ratio Perm		0.01		c0.15		0.09
v/c Ratio	0.29	0.03		0.36	0.16	0.22
Uniform Delay, d1	10.8	10.2		6.8	6.2	6.4
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0		0.2	0.1	0.2
Delay (s)	11.1	10.2		7.0	6.2	6.5
Level of Service	B	B		A	A	A
Approach Delay (s)	10.9			7.0	6.4	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	34.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1	192	188	85	497	3	170	29	28	5	108	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95	1.00		0.95		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00		1.00	0.94		1.00	1.00	
Flt Protected		1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3300	1478		3271		1652	3105		1652	3293	
Flt Permitted		0.94	1.00		0.86		0.63	1.00		0.70	1.00	
Satd. Flow (perm)		3099	1478		2823		1089	3105		1221	3293	
Peak-hour factor, PHF	0.25	0.94	0.89	0.82	0.91	0.38	0.76	0.60	0.88	0.42	0.55	0.25
Adj. Flow (vph)	4	204	211	104	546	8	224	48	32	12	196	4
RTOR Reduction (vph)	0	0	127	0	2	0	0	24	0	0	3	0
Lane Group Flow (vph)	0	208	84	0	656	0	224	56	0	12	197	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)		13.8	13.8		13.8		9.0	9.0		9.0	9.0	
Effective Green, g (s)		13.8	13.8		13.8		9.0	9.0		9.0	9.0	
Actuated g/C Ratio		0.40	0.40		0.40		0.26	0.26		0.26	0.26	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1229	586		1119		282	803		316	852	
v/s Ratio Prot								0.02			0.06	
v/s Ratio Perm		0.07	0.06		c0.23		c0.21			0.01		
v/c Ratio		0.17	0.14		0.59		0.79	0.07		0.04	0.23	
Uniform Delay, d1		6.8	6.7		8.3		12.0	9.7		9.7	10.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.1		0.8		14.2	0.0		0.0	0.1	
Delay (s)		6.9	6.8		9.0		26.3	9.8		9.7	10.3	
Level of Service		A	A		A		C	A		A	B	
Approach Delay (s)		6.8			9.0			21.9			10.3	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	34.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	50	132	77	75	4	345	177	75	2	70	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			6.0			6.0	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frt		1.00	0.85		0.99			0.98			0.99	
Flt Protected		0.99	1.00		0.98			0.97			1.00	
Satd. Flow (prot)		1715	1478		1689			3147			3256	
Flt Permitted		0.86	1.00		0.80			0.75			0.90	
Satd. Flow (perm)		1490	1478		1385			2417			2932	
Peak-hour factor, PHF	0.54	0.69	0.72	0.84	0.78	0.50	0.76	0.89	0.82	0.25	0.73	0.50
Adj. Flow (vph)	28	72	183	92	96	8	454	199	91	8	96	8
RTOR Reduction (vph)	0	0	140	0	5	0	0	23	0	0	4	0
Lane Group Flow (vph)	0	100	43	0	191	0	0	721	0	0	108	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		8.9	8.9		8.9			16.7			16.7	
Effective Green, g (s)		8.9	8.9		8.9			16.7			16.7	
Actuated g/C Ratio		0.24	0.24		0.24			0.44			0.44	
Clearance Time (s)		6.0	6.0		6.0			6.0			6.0	
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)		353	350		328			1074			1302	
v/s Ratio Prot												
v/s Ratio Perm		0.07	0.03		c0.14			c0.30			0.04	
v/c Ratio		0.28	0.12		0.58			0.67			0.08	
Uniform Delay, d1		11.7	11.3		12.7			8.3			6.0	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		0.4	0.2		2.6			1.7			0.0	
Delay (s)		12.2	11.4		15.3			9.9			6.1	
Level of Service		B	B		B			A			A	
Approach Delay (s)		11.7			15.3			9.9			6.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

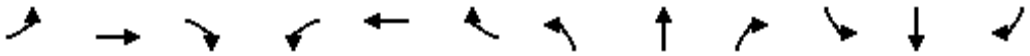
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	40	83	563	25	24	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frt	0.91		0.99			1.00
Flt Protected	0.98		1.00			0.99
Satd. Flow (prot)	1552		3281			3279
Flt Permitted	0.98		1.00			0.79
Satd. Flow (perm)	1552		3281			2594
Peak-hour factor, PHF	0.39	0.36	0.83	0.78	0.50	0.95
Adj. Flow (vph)	103	231	678	32	48	279
RTOR Reduction (vph)	57	0	8	0	0	0
Lane Group Flow (vph)	277	0	702	0	0	327
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	11.8		13.7			13.7
Effective Green, g (s)	11.8		13.7			13.7
Actuated g/C Ratio	0.31		0.37			0.37
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	488		1199			948
v/s Ratio Prot	c0.18		c0.21			
v/s Ratio Perm						0.13
v/c Ratio	0.57		0.59			0.34
Uniform Delay, d1	10.7		9.6			8.6
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	1.5		0.7			0.2
Delay (s)	12.2		10.3			8.9
Level of Service	B		B			A
Approach Delay (s)	12.2		10.3			8.9
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	37.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2011

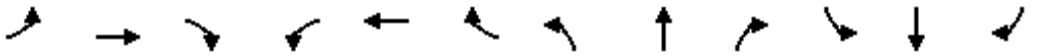
3-Lane Scenario

AM Peak Hour



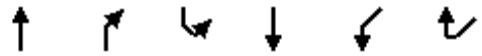
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	225	3	53	28	19	17	197	228	145	303	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3279		1652	1739	1478	1652	1739	1478	1652	1723	
Flt Permitted		0.93		0.54	1.00	1.00	0.51	1.00	1.00	0.62	1.00	
Satd. Flow (perm)		3059		936	1739	1478	885	1739	1478	1075	1723	
Peak-hour factor, PHF	0.54	0.70	0.38	0.74	0.70	0.43	0.71	0.88	0.77	0.84	0.81	0.46
Adj. Flow (vph)	28	321	8	72	40	44	24	224	296	173	374	24
RTOR Reduction (vph)	0	4	0	0	0	31	0	0	190	0	6	0
Lane Group Flow (vph)	0	353	0	72	40	13	24	224	106	173	392	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		10.7		10.7	10.7	10.7	12.7	12.7	12.7	12.7	12.7	
Effective Green, g (s)		10.7		10.7	10.7	10.7	12.7	12.7	12.7	12.7	12.7	
Actuated g/C Ratio		0.30		0.30	0.30	0.30	0.36	0.36	0.36	0.36	0.36	
Clearance Time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		925		283	526	447	318	624	530	386	618	
v/s Ratio Prot					0.02			0.13			c0.23	
v/s Ratio Perm		c0.12		0.08		0.01	0.03		0.07	0.16		
v/c Ratio		0.38		0.25	0.08	0.03	0.08	0.36	0.20	0.45	0.63	
Uniform Delay, d1		9.7		9.3	8.8	8.7	7.5	8.4	7.8	8.7	9.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3		0.5	0.1	0.0	0.1	0.4	0.2	0.8	2.1	
Delay (s)		10.0		9.8	8.9	8.7	7.6	8.7	8.0	9.5	11.6	
Level of Service		B		A	A	A	A	A	A	A	B	
Approach Delay (s)		10.0			9.3			8.3			10.9	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	35.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



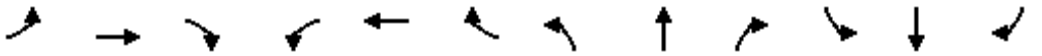
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	19	43	3	10	6	49	170	3	9	384	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.93		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1604		1652	1627		1652	1729		1652	1714	
Flt Permitted		0.92		0.70	1.00		0.50	1.00		0.62	1.00	
Satd. Flow (perm)		1492		1220	1627		861	1729		1086	1714	
Peak-hour factor, PHF	0.55	0.68	0.90	0.38	0.63	0.50	0.72	0.83	0.38	0.56	0.92	0.64
Adj. Flow (vph)	20	28	48	8	16	12	68	205	8	16	417	44
RTOR Reduction (vph)	0	41	0	0	10	0	0	2	0	0	7	0
Lane Group Flow (vph)	0	55	0	8	18	0	68	211	0	16	454	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		5.7		5.7	5.7		19.0	19.0		19.0	19.0	
Effective Green, g (s)		5.7		5.7	5.7		19.0	19.0		19.0	19.0	
Actuated g/C Ratio		0.16		0.16	0.16		0.52	0.52		0.52	0.52	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		232		189	253		446	895		562	887	
v/s Ratio Prot					0.01			0.12			c0.26	
v/s Ratio Perm		c0.04		0.01			0.08			0.01		
v/c Ratio		0.24		0.04	0.07		0.15	0.24		0.03	0.51	
Uniform Delay, d1		13.6		13.2	13.2		4.6	4.9		4.3	5.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5		0.1	0.1		0.2	0.1		0.0	0.5	
Delay (s)		14.1		13.3	13.4		4.8	5.0		4.4	6.3	
Level of Service		B		B	B		A	A		A	A	
Approach Delay (s)		14.1			13.3			4.9			6.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	36.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	195	30	0	439	22	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	1739	1478		1739	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	1739	1478		1739	1652	
Peak-hour factor, PHF	0.86	0.75	0.92	0.89	0.55	0.92
Adj. Flow (vph)	227	40	0	493	40	0
RTOR Reduction (vph)	0	25	0	0	0	0
Lane Group Flow (vph)	227	15	0	493	40	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	13.2	13.2		13.2	10.0	
Effective Green, g (s)	13.2	13.2		13.2	10.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	652	554		652	469	
v/s Ratio Prot	0.13			c0.28	c0.02	
v/s Ratio Perm		0.01				
v/c Ratio	0.35	0.03		0.76	0.09	
Uniform Delay, d1	7.9	6.9		9.6	9.2	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.0		5.0	0.1	
Delay (s)	8.2	7.0		14.6	9.3	
Level of Service	A	A		B	A	
Approach Delay (s)	8.0			14.6	9.3	
Approach LOS	A			B	A	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	35.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



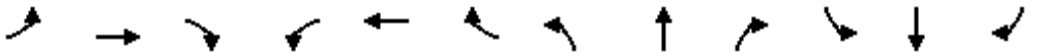
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	103	14	4	36	7	13	53	11	18	80	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		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)	1652	1707		1652	1701		1652	1695		1652	1707	
Flt Permitted	0.82	1.00		0.82	1.00		0.83	1.00		0.83	1.00	
Satd. Flow (perm)	1419	1707		1419	1701		1449	1695		1449	1707	
Peak-hour factor, PHF	1.00	0.72	0.70	1.00	0.75	0.88	0.82	0.88	0.92	0.75	0.91	0.75
Adj. Flow (vph)	4	143	20	4	48	8	16	60	12	24	88	12
RTOR Reduction (vph)	0	15	0	0	6	0	0	9	0	0	9	0
Lane Group Flow (vph)	4	148	0	4	50	0	16	63	0	24	91	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	4.9	4.9		4.9	4.9		4.8	4.8		4.8	4.8	
Effective Green, g (s)	4.9	4.9		4.9	4.9		4.8	4.8		4.8	4.8	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.22	0.22		0.22	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	385		320	384		321	375		321	378	
v/s Ratio Prot		c0.09			0.03			0.04			c0.05	
v/s Ratio Perm	0.00			0.00			0.01			0.02		
v/c Ratio	0.01	0.39		0.01	0.13		0.05	0.17		0.07	0.24	
Uniform Delay, d1	6.5	7.1		6.5	6.7		6.7	6.8		6.7	6.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.6		0.0	0.2		0.1	0.2		0.1	0.3	
Delay (s)	6.5	7.8		6.5	6.9		6.7	7.0		6.8	7.3	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		7.7			6.8			7.0			7.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	21.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	149	138	211	2	0	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	1.00	1.00			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	1739	1737			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	1739	1737			2601
Peak-hour factor, PHF	0.98	0.88	0.81	0.92	0.92	0.81
Adj. Flow (vph)	152	157	260	2	0	578
RTOR Reduction (vph)	0	0	1	0	0	500
Lane Group Flow (vph)	152	157	261	0	0	78
Confl. Peds. (#/hr)	2					
Turn Type	Prot					custom
Protected Phases	5	2	6			
Permitted Phases						4
Actuated Green, G (s)	8.1	26.4	12.3			6.0
Effective Green, g (s)	8.1	26.4	12.3			6.0
Actuated g/C Ratio	0.18	0.59	0.28			0.14
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	301	1034	481			351
v/s Ratio Prot	c0.09	0.09	c0.15			
v/s Ratio Perm						c0.03
v/c Ratio	0.50	0.15	0.54			0.22
Uniform Delay, d1	16.3	4.0	13.7			17.1
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	1.3	0.1	1.3			0.3
Delay (s)	17.7	4.1	14.9			17.4
Level of Service	B	A	B			B
Approach Delay (s)		10.8	14.9		17.4	
Approach LOS		B	B		B	

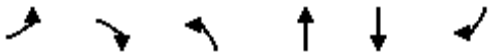
Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



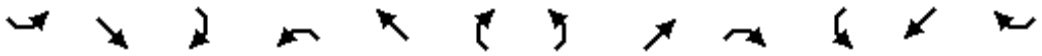
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	223	56	84	103	9	39	202	125	37	344	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.94		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)	1652	3191		1652	3262		1652	1631		1652	1696	
Flt Permitted	0.66	1.00		0.56	1.00		0.45	1.00		0.51	1.00	
Satd. Flow (perm)	1149	3191		973	3262		777	1631		879	1696	
Peak-hour factor, PHF	0.81	0.91	0.78	0.72	0.78	0.75	0.70	0.86	0.76	0.62	0.92	0.78
Adj. Flow (vph)	48	245	72	117	132	12	56	235	164	60	374	72
RTOR Reduction (vph)	0	51	0	0	8	0	0	60	0	0	17	0
Lane Group Flow (vph)	48	266	0	117	136	0	56	339	0	60	429	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.1	11.1		11.1	11.1		14.1	14.1		14.1	14.1	
Effective Green, g (s)	11.1	11.1		11.1	11.1		14.1	14.1		14.1	14.1	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.38	0.38		0.38	0.38	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	343	952		290	973		295	618		333	643	
v/s Ratio Prot		0.08			0.04			0.21			c0.25	
v/s Ratio Perm	0.04			c0.12			0.07			0.07		
v/c Ratio	0.14	0.28		0.40	0.14		0.19	0.55		0.18	0.67	
Uniform Delay, d1	9.6	10.0		10.4	9.6		7.7	9.1		7.7	9.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2		0.9	0.1		0.3	1.0		0.3	2.6	
Delay (s)	9.7	10.2		11.3	9.6		8.0	10.1		8.0	12.2	
Level of Service	A	B		B	A		A	B		A	B	
Approach Delay (s)		10.1			10.4			9.8			11.7	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



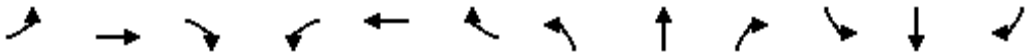
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	269	24	2	187	197	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3204	1478	1652	1739	1739	1478
Flt Permitted	0.95	1.00	0.61	1.00	1.00	1.00
Satd. Flow (perm)	3204	1478	1060	1739	1739	1478
Peak-hour factor, PHF	0.90	0.60	0.25	0.79	0.82	0.82
Adj. Flow (vph)	299	40	8	237	240	137
RTOR Reduction (vph)	0	31	0	0	0	81
Lane Group Flow (vph)	299	9	8	237	240	56
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	8.1	8.1	14.1	14.1	14.1	14.1
Effective Green, g (s)	8.1	8.1	14.1	14.1	14.1	14.1
Actuated g/C Ratio	0.24	0.24	0.41	0.41	0.41	0.41
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	759	350	437	717	717	609
v/s Ratio Prot	c0.09			0.14	c0.14	
v/s Ratio Perm		0.01	0.01			0.04
v/c Ratio	0.39	0.03	0.02	0.33	0.33	0.09
Uniform Delay, d1	11.0	10.0	6.0	6.8	6.9	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.0	0.3	0.3	0.1
Delay (s)	11.3	10.1	6.0	7.1	7.1	6.2
Level of Service	B	B	A	A	A	A
Approach Delay (s)	11.2			7.1	6.8	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	34.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	396	122	34	168	5	189	137	77	7	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00			0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1652	1739	1478	1652	1732			3135		1652	3303	
Flt Permitted	0.64	1.00	1.00	0.46	1.00			0.82		0.50	1.00	
Satd. Flow (perm)	1111	1739	1478	798	1732			2628		865	3303	
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)	5	430	133	37	183	5	205	149	84	8	25	0
RTOR Reduction (vph)	0	0	86	0	3	0	0	54	0	0	0	0
Lane Group Flow (vph)	5	430	47	37	185	0	0	384	0	8	25	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	12.7	12.7	12.7	12.7	12.7			11.3		11.3	11.3	
Effective Green, g (s)	12.7	12.7	12.7	12.7	12.7			11.3		11.3	11.3	
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35			0.31		0.31	0.31	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	392	613	521	282	611			825		272	1037	
v/s Ratio Prot		c0.25			0.11						0.01	
v/s Ratio Perm	0.00		0.03	0.05				c0.15		0.01		
v/c Ratio	0.01	0.70	0.09	0.13	0.30			0.47		0.03	0.02	
Uniform Delay, d1	7.6	10.0	7.8	7.9	8.4			9.9		8.6	8.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.0	3.6	0.1	0.2	0.3			0.4		0.0	0.0	
Delay (s)	7.6	13.6	7.9	8.1	8.7			10.3		8.6	8.5	
Level of Service	A	B	A	A	A			B		A	A	
Approach Delay (s)		12.2			8.6			10.3			8.6	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	36.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	117	303	49	82	13	113	76	90	23	80	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.90		1.00	0.99	
Flt Protected		1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1737	1478		1688		1652	1560		1652	1718	
Flt Permitted		0.99	1.00		0.84		0.69	1.00		0.60	1.00	
Satd. Flow (perm)		1719	1478		1443		1204	1560		1047	1718	
Peak-hour factor, PHF	0.75	0.71	0.91	0.77	0.62	0.54	0.97	0.95	0.52	0.38	0.87	0.50
Adj. Flow (vph)	4	165	333	64	132	24	116	80	173	61	92	8
RTOR Reduction (vph)	0	0	224	0	11	0	0	118	0	0	5	0
Lane Group Flow (vph)	0	169	109	0	209	0	116	135	0	61	95	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		11.0	11.0		11.0		10.7	10.7		10.7	10.7	
Effective Green, g (s)		11.0	11.0		11.0		10.7	10.7		10.7	10.7	
Actuated g/C Ratio		0.33	0.33		0.33		0.32	0.32		0.32	0.32	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		561	482		471		382	495		332	545	
v/s Ratio Prot								0.09			0.06	
v/s Ratio Perm		0.10	0.07		c0.14		c0.10			0.06		
v/c Ratio		0.30	0.23		0.44		0.30	0.27		0.18	0.17	
Uniform Delay, d1		8.5	8.3		8.9		8.7	8.6		8.3	8.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.2		0.7		0.5	0.3		0.3	0.2	
Delay (s)		8.8	8.5		9.6		9.1	8.9		8.6	8.5	
Level of Service		A	A		A		A	A		A	A	
Approach Delay (s)		8.6			9.6			9.0			8.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	33.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

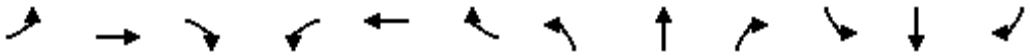
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	58	55	226	44	37	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.96		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1614		1684		1652	1739
Flt Permitted	0.97		1.00		0.53	1.00
Satd. Flow (perm)	1614		1684		921	1739
Peak-hour factor, PHF	0.34	0.81	0.75	0.48	0.84	0.93
Adj. Flow (vph)	171	68	301	92	44	434
RTOR Reduction (vph)	42	0	24	0	0	0
Lane Group Flow (vph)	197	0	369	0	44	434
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	8.7		16.1		16.1	16.1
Effective Green, g (s)	8.7		16.1		16.1	16.1
Actuated g/C Ratio	0.24		0.44		0.44	0.44
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	382		737		403	761
v/s Ratio Prot	c0.12		0.22			c0.25
v/s Ratio Perm					0.05	
v/c Ratio	0.52		0.50		0.11	0.57
Uniform Delay, d1	12.2		7.5		6.1	7.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.2		0.5		0.1	1.0
Delay (s)	13.4		8.0		6.2	8.8
Level of Service	B		A		A	A
Approach Delay (s)	13.4		8.0			8.6
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2011

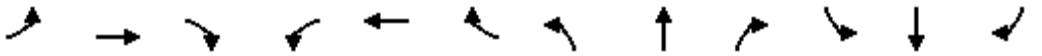
3-Lane Scenario

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	21	14	151	141	160	20	512	29	25	283	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3114		1652	1739	1478	1652	1739	1478	1652	1726	
Flt Permitted		0.83		0.71	1.00	1.00	0.55	1.00	1.00	0.30	1.00	
Satd. Flow (perm)		2628		1230	1739	1478	963	1739	1478	528	1726	
Peak-hour factor, PHF	0.54	0.75	0.70	0.84	0.72	0.73	0.55	0.87	0.66	0.57	0.86	0.56
Adj. Flow (vph)	24	28	20	180	196	219	36	589	44	44	329	16
RTOR Reduction (vph)	0	14	0	0	0	125	0	0	25	0	4	0
Lane Group Flow (vph)	0	58	0	180	196	94	36	589	19	44	341	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		12.0		12.0	12.0	12.0	18.1	18.1	18.1	18.1	18.1	
Effective Green, g (s)		12.0		12.0	12.0	12.0	18.1	18.1	18.1	18.1	18.1	
Actuated g/C Ratio		0.29		0.29	0.29	0.29	0.43	0.43	0.43	0.43	0.43	
Clearance Time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		749		351	496	421	414	748	635	227	742	
v/s Ratio Prot					0.11			c0.34			0.20	
v/s Ratio Perm		0.02		c0.15		0.06	0.04		0.01	0.08		
v/c Ratio		0.08		0.51	0.40	0.22	0.09	0.79	0.03	0.19	0.46	
Uniform Delay, d1		11.0		12.6	12.1	11.5	7.1	10.3	6.9	7.5	8.5	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		1.3	0.5	0.3	0.1	5.5	0.0	0.4	0.5	
Delay (s)		11.0		13.9	12.6	11.8	7.2	15.8	6.9	7.9	9.0	
Level of Service		B		B	B	B	A	B	A	A	A	
Approach Delay (s)		11.0			12.7			14.8			8.9	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	42.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

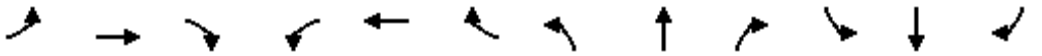


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	35	86	3	32	4	77	583	7	11	217	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.92		1.00	0.99		1.00	1.00		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1591		1652	1717		1652	1731		1652	1700	
Flt Permitted		0.92		0.77	1.00		0.58	1.00		0.29	1.00	
Satd. Flow (perm)		1484		1333	1717		1007	1731		509	1700	
Peak-hour factor, PHF	0.56	0.80	0.86	0.39	0.73	1.00	0.84	0.85	0.35	0.69	0.86	0.77
Adj. Flow (vph)	32	44	100	8	44	4	92	686	20	16	252	44
RTOR Reduction (vph)	0	83	0	0	3	0	0	2	0	0	10	0
Lane Group Flow (vph)	0	93	0	8	45	0	92	704	0	16	286	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.0		8.0	8.0		26.3	26.3		26.3	26.3	
Effective Green, g (s)		8.0		8.0	8.0		26.3	26.3		26.3	26.3	
Actuated g/C Ratio		0.17		0.17	0.17		0.57	0.57		0.57	0.57	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		256		230	297		572	983		289	966	
v/s Ratio Prot					0.03			c0.41			0.17	
v/s Ratio Perm		c0.06		0.01			0.09			0.03		
v/c Ratio		0.36		0.03	0.15		0.16	0.72		0.06	0.30	
Uniform Delay, d1		16.9		15.9	16.3		4.8	7.3		4.5	5.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9		0.1	0.2		0.1	2.5		0.1	0.2	
Delay (s)		17.8		16.0	16.5		4.9	9.8		4.5	5.4	
Level of Service		B		B	B		A	A		A	A	
Approach Delay (s)		17.8			16.4			9.2			5.3	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	678	44	0	290	59	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	1739	1478		1739	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	1739	1478		1739	1652	
Peak-hour factor, PHF	0.96	0.65	0.92	0.88	0.87	0.92
Adj. Flow (vph)	706	68	0	330	68	0
RTOR Reduction (vph)	0	33	0	0	0	0
Lane Group Flow (vph)	706	35	0	330	68	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	23.1	23.1		23.1	10.2	
Effective Green, g (s)	23.1	23.1		23.1	10.2	
Actuated g/C Ratio	0.51	0.51		0.51	0.23	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	887	754		887	372	
v/s Ratio Prot	c0.41			0.19	c0.04	
v/s Ratio Perm		0.02				
v/c Ratio	0.80	0.05		0.37	0.18	
Uniform Delay, d1	9.2	5.6		6.7	14.2	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.0	0.0		0.3	0.2	
Delay (s)	14.2	5.6		7.0	14.4	
Level of Service	B	A		A	B	
Approach Delay (s)	13.4			7.0	14.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



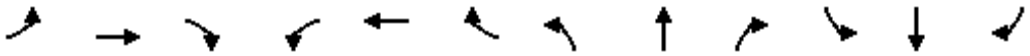
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	86	11	33	137	10	48	86	46	7	31	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.95		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)	1652	1698		1652	1697		1652	1656		1652	1739	
Flt Permitted	0.64	1.00		0.67	1.00		0.72	1.00		0.65	1.00	
Satd. Flow (perm)	1105	1698		1173	1697		1257	1656		1136	1739	
Peak-hour factor, PHF	0.25	0.80	0.55	0.59	0.84	0.32	0.71	0.77	0.88	0.58	0.60	1.00
Adj. Flow (vph)	8	108	20	56	163	31	68	112	52	12	52	0
RTOR Reduction (vph)	0	14	0	0	19	0	0	38	0	0	0	0
Lane Group Flow (vph)	8	114	0	56	175	0	68	126	0	12	52	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	7.8	7.8		7.8	7.8		7.5	7.5		7.5	7.5	
Effective Green, g (s)	7.8	7.8		7.8	7.8		7.5	7.5		7.5	7.5	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	316	485		335	485		345	455		312	478	
v/s Ratio Prot		0.07			c0.10			c0.08			0.03	
v/s Ratio Perm	0.01			0.05			0.05			0.01		
v/c Ratio	0.03	0.23		0.17	0.36		0.20	0.28		0.04	0.11	
Uniform Delay, d1	7.0	7.5		7.3	7.8		7.6	7.8		7.3	7.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2		0.2	0.5		0.3	0.3		0.1	0.1	
Delay (s)	7.0	7.7		7.6	8.2		7.9	8.1		7.3	7.5	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		7.7			8.1			8.0			7.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	27.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	349	370	164	11	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	1.00	1.00			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	0.99			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	1739	1715			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	1739	1715			2601
Peak-hour factor, PHF	0.78	0.87	0.91	0.55	0.92	0.93
Adj. Flow (vph)	447	425	180	20	0	317
RTOR Reduction (vph)	0	0	7	0	0	281
Lane Group Flow (vph)	447	425	193	0	0	36
Confl. Peds. (#/hr)	2					
Turn Type	Prot					custom
Protected Phases	5	2	6			
Permitted Phases						4
Actuated Green, G (s)	14.0	31.3	11.3			5.5
Effective Green, g (s)	14.0	31.3	11.3			5.5
Actuated g/C Ratio	0.29	0.64	0.23			0.11
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	474	1115	397			293
v/s Ratio Prot	c0.27	0.24	c0.11			
v/s Ratio Perm						c0.01
v/c Ratio	0.94	0.38	0.49			0.12
Uniform Delay, d1	17.0	4.2	16.2			19.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	27.4	0.2	0.9			0.2
Delay (s)	44.5	4.4	17.2			19.7
Level of Service	D	A	B			B
Approach Delay (s)		24.9	17.2		19.7	
Approach LOS		C	B		B	

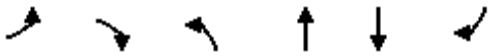
Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



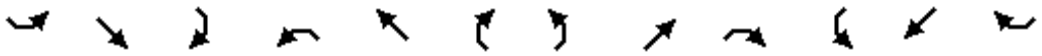
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	240	34	74	105	66	100	541	73	14	263	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.94		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3245		1652	3098		1652	1708		1652	1685	
Flt Permitted	0.62	1.00		0.49	1.00		0.54	1.00		0.22	1.00	
Satd. Flow (perm)	1085	3245		859	3098		934	1708		384	1685	
Peak-hour factor, PHF	0.84	0.61	0.65	0.80	0.88	0.79	0.74	0.82	0.83	0.70	0.90	0.74
Adj. Flow (vph)	117	393	52	92	119	84	135	660	88	20	292	76
RTOR Reduction (vph)	0	17	0	0	64	0	0	9	0	0	17	0
Lane Group Flow (vph)	117	428	0	92	139	0	135	739	0	20	351	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.3	12.3		12.3	12.3		26.8	26.8		26.8	26.8	
Effective Green, g (s)	12.3	12.3		12.3	12.3		26.8	26.8		26.8	26.8	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	261	781		207	746		490	896		201	884	
v/s Ratio Prot		c0.13			0.04			c0.43			0.21	
v/s Ratio Perm	0.11			0.11			0.14			0.05		
v/c Ratio	0.45	0.55		0.44	0.19		0.28	0.83		0.10	0.40	
Uniform Delay, d1	16.5	17.0		16.5	15.4		6.8	10.2		6.1	7.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.8		1.5	0.1		0.3	6.3		0.2	0.3	
Delay (s)	17.7	17.8		18.0	15.5		7.1	16.4		6.3	7.6	
Level of Service	B	B		B	B		A	B		A	A	
Approach Delay (s)		17.8			16.3			15.0			7.5	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



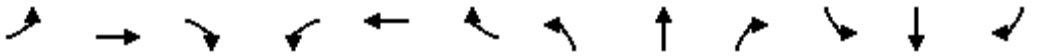
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	165	23	15	350	181	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3204	1478	1652	1739	1739	1478
Flt Permitted	0.95	1.00	0.62	1.00	1.00	1.00
Satd. Flow (perm)	3204	1478	1084	1739	1739	1478
Peak-hour factor, PHF	0.76	0.58	0.54	0.81	0.84	0.93
Adj. Flow (vph)	217	40	28	432	215	322
RTOR Reduction (vph)	0	31	0	0	0	178
Lane Group Flow (vph)	217	9	28	432	215	144
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	7.8	7.8	16.0	16.0	16.0	16.0
Effective Green, g (s)	7.8	7.8	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.22	0.22	0.45	0.45	0.45	0.45
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	698	322	484	777	777	661
v/s Ratio Prot	c0.07			c0.25	0.12	
v/s Ratio Perm		0.01	0.03			0.10
v/c Ratio	0.31	0.03	0.06	0.56	0.28	0.22
Uniform Delay, d1	11.7	11.0	5.6	7.3	6.2	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1	0.9	0.2	0.2
Delay (s)	12.0	11.0	5.7	8.2	6.4	6.2
Level of Service	B	B	A	A	A	A
Approach Delay (s)	11.9			8.0	6.3	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	35.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1	192	188	85	497	3	170	29	28	5	108	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	1739	1478	1652	1735		1652	3105		1652	3293	
Flt Permitted	0.36	1.00	1.00	0.63	1.00		0.63	1.00		0.70	1.00	
Satd. Flow (perm)	633	1739	1478	1095	1735		1089	3105		1221	3293	
Peak-hour factor, PHF	0.25	0.94	0.89	0.82	0.91	0.38	0.76	0.60	0.88	0.42	0.55	0.25
Adj. Flow (vph)	4	204	211	104	546	8	224	48	32	12	196	4
RTOR Reduction (vph)	0	0	113	0	1	0	0	24	0	0	3	0
Lane Group Flow (vph)	4	204	98	104	553	0	224	56	0	12	197	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	19.1	19.1	19.1	19.1	19.1		10.2	10.2		10.2	10.2	
Effective Green, g (s)	19.1	19.1	19.1	19.1	19.1		10.2	10.2		10.2	10.2	
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.46		0.25	0.25		0.25	0.25	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	293	804	684	506	802		269	767		302	813	
v/s Ratio Prot		0.12			c0.32			0.02			0.06	
v/s Ratio Perm	0.01		0.07	0.09			c0.21			0.01		
v/c Ratio	0.01	0.25	0.14	0.21	0.69		0.83	0.07		0.04	0.24	
Uniform Delay, d1	6.0	6.8	6.4	6.6	8.8		14.7	11.9		11.8	12.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2	0.1	0.2	2.5		19.3	0.0		0.1	0.2	
Delay (s)	6.0	6.9	6.5	6.8	11.2		34.0	12.0		11.9	12.6	
Level of Service	A	A	A	A	B		C	B		B	B	
Approach Delay (s)		6.7			10.5			28.2			12.6	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	41.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	50	132	77	75	4	345	177	75	2	70	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.95		1.00	0.99	
Flt Protected		0.99	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1715	1478		1689		1652	1657		1652	1719	
Flt Permitted		0.87	1.00		0.80		0.69	1.00		0.58	1.00	
Satd. Flow (perm)		1518	1478		1385		1199	1657		1012	1719	
Peak-hour factor, PHF	0.54	0.69	0.72	0.84	0.78	0.50	0.76	0.89	0.82	0.25	0.73	0.50
Adj. Flow (vph)	28	72	183	92	96	8	454	199	91	8	96	8
RTOR Reduction (vph)	0	0	147	0	3	0	0	28	0	0	4	0
Lane Group Flow (vph)	0	100	36	0	193	0	454	262	0	8	100	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		9.2	9.2		9.2		25.8	25.8		25.8	25.8	
Effective Green, g (s)		9.2	9.2		9.2		25.8	25.8		25.8	25.8	
Actuated g/C Ratio		0.20	0.20		0.20		0.55	0.55		0.55	0.55	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		297	289		271		658	910		556	944	
v/s Ratio Prot								0.16			0.06	
v/s Ratio Perm		0.07	0.02		c0.14		c0.38			0.01		
v/c Ratio		0.34	0.12		0.71		0.69	0.29		0.01	0.11	
Uniform Delay, d1		16.3	15.6		17.7		7.7	5.7		4.8	5.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.2		8.5		3.0	0.2		0.0	0.0	
Delay (s)		16.9	15.8		26.2		10.7	5.9		4.8	5.1	
Level of Service		B	B		C		B	A		A	A	
Approach Delay (s)		16.2			26.2			8.8			5.1	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

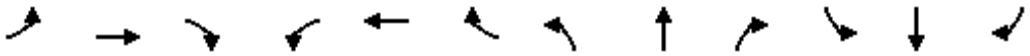
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	40	83	563	25	24	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.91		0.99		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1552		1728		1652	1739
Flt Permitted	0.98		1.00		0.24	1.00
Satd. Flow (perm)	1552		1728		412	1739
Peak-hour factor, PHF	0.39	0.36	0.83	0.78	0.50	0.95
Adj. Flow (vph)	103	231	678	32	48	279
RTOR Reduction (vph)	134	0	3	0	0	0
Lane Group Flow (vph)	200	0	707	0	48	279
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	12.2		24.4		24.4	24.4
Effective Green, g (s)	12.2		24.4		24.4	24.4
Actuated g/C Ratio	0.25		0.50		0.50	0.50
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	390		868		207	873
v/s Ratio Prot	c0.13		c0.41			0.16
v/s Ratio Perm					0.12	
v/c Ratio	0.51		0.81		0.23	0.32
Uniform Delay, d1	15.6		10.2		6.8	7.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.1		5.9		0.6	0.2
Delay (s)	16.8		16.1		7.4	7.4
Level of Service	B		B		A	A
Approach Delay (s)	16.8		16.1			7.4
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2018

5-Lane Scenario

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	28	19	202	189	214	27	686	39	34	379	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00	1.00	0.95	
Frt		0.96		1.00	1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3112		1652	1739	1478		3294	1478	1652	3281	
Flt Permitted		0.82		0.69	1.00	1.00		0.90	1.00	0.29	1.00	
Satd. Flow (perm)		2581		1204	1739	1478		2962	1478	504	3281	
Peak-hour factor, PHF	0.54	0.75	0.70	0.84	0.72	0.73	0.55	0.87	0.66	0.57	0.86	0.56
Adj. Flow (vph)	31	37	27	240	262	293	49	789	59	60	441	21
RTOR Reduction (vph)	0	18	0	0	0	53	0	0	36	0	8	0
Lane Group Flow (vph)	0	77	0	240	262	240	0	838	23	60	454	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		13.3		13.3	13.3	13.3		15.9	15.9	15.9	15.9	
Effective Green, g (s)		13.3		13.3	13.3	13.3		15.9	15.9	15.9	15.9	
Actuated g/C Ratio		0.32		0.32	0.32	0.32		0.39	0.39	0.39	0.39	
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		833		389	561	477		1143	570	195	1266	
v/s Ratio Prot					0.15						0.14	
v/s Ratio Perm		0.03		c0.20		0.16		c0.28	0.02	0.12		
v/c Ratio		0.09		0.62	0.47	0.50		0.73	0.04	0.31	0.36	
Uniform Delay, d1		9.7		11.8	11.1	11.3		10.8	7.9	8.8	9.0	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		2.9	0.6	0.8		2.5	0.0	0.9	0.2	
Delay (s)		9.8		14.7	11.7	12.1		13.3	7.9	9.7	9.2	
Level of Service		A		B	B	B		B	A	A	A	
Approach Delay (s)		9.8			12.8			12.9			9.3	
Approach LOS		A			B			B			A	

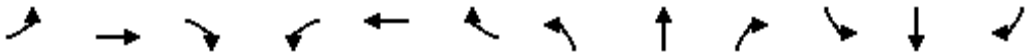
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	47	115	4	43	5	103	781	9	15	291	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt		0.92		1.00	0.99		1.00	1.00		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1591		1652	1718		1652	3290		1652	3229	
Flt Permitted		0.92		0.74	1.00		0.52	1.00		0.27	1.00	
Satd. Flow (perm)		1478		1292	1718		900	3290		471	3229	
Peak-hour factor, PHF	0.56	0.80	0.86	0.39	0.73	1.00	0.84	0.85	0.35	0.69	0.86	0.77
Adj. Flow (vph)	43	59	134	10	59	5	123	919	26	22	338	60
RTOR Reduction (vph)	0	104	0	0	4	0	0	4	0	0	31	0
Lane Group Flow (vph)	0	132	0	10	60	0	123	941	0	22	367	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.3		8.3	8.3		16.6	16.6		16.6	16.6	
Effective Green, g (s)		8.3		8.3	8.3		16.6	16.6		16.6	16.6	
Actuated g/C Ratio		0.22		0.22	0.22		0.45	0.45		0.45	0.45	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		332		291	386		405	1480		212	1453	
v/s Ratio Prot					0.03			c0.29			0.11	
v/s Ratio Perm		c0.09		0.01			0.14			0.05		
v/c Ratio		0.40		0.03	0.16		0.30	0.64		0.10	0.25	
Uniform Delay, d1		12.2		11.2	11.5		6.5	7.8		5.9	6.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8		0.0	0.2		0.4	0.9		0.2	0.1	
Delay (s)		13.0		11.2	11.7		6.9	8.7		6.1	6.4	
Level of Service		B		B	B		A	A		A	A	
Approach Delay (s)		13.0			11.6			8.5			6.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	36.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	909	59	0	389	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.96	0.65	0.92	0.88	0.87	0.92
Adj. Flow (vph)	947	91	0	442	91	0
RTOR Reduction (vph)	0	56	0	0	0	0
Lane Group Flow (vph)	947	35	0	442	91	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	13.6	13.6		13.6	10.0	
Effective Green, g (s)	13.6	13.6		13.6	10.0	
Actuated g/C Ratio	0.38	0.38		0.38	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1262	565		1262	464	
v/s Ratio Prot	c0.29			0.13	c0.06	
v/s Ratio Perm		0.02				
v/c Ratio	0.75	0.06		0.35	0.20	
Uniform Delay, d1	9.5	7.0		7.8	9.7	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.0		0.2	0.2	
Delay (s)	12.1	7.0		8.0	9.9	
Level of Service	B	A		A	A	
Approach Delay (s)	11.6			8.0	9.9	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	35.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



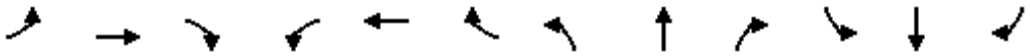
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	96	12	37	153	11	54	96	52	8	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.95		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)	1652	1698		1652	1698		1652	1655		1652	1739	
Flt Permitted	0.62	1.00		0.67	1.00		0.72	1.00		0.64	1.00	
Satd. Flow (perm)	1083	1698		1159	1698		1250	1655		1115	1739	
Peak-hour factor, PHF	0.25	0.80	0.55	0.59	0.84	0.32	0.71	0.77	0.88	0.58	0.60	1.00
Adj. Flow (vph)	8	120	22	63	182	34	76	125	59	14	58	0
RTOR Reduction (vph)	0	16	0	0	19	0	0	43	0	0	0	0
Lane Group Flow (vph)	8	126	0	63	197	0	76	141	0	14	58	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	7.9	7.9		7.9	7.9		7.7	7.7		7.7	7.7	
Effective Green, g (s)	7.9	7.9		7.9	7.9		7.7	7.7		7.7	7.7	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.28	0.28		0.28	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	310	486		332	486		349	462		311	485	
v/s Ratio Prot		0.07			c0.12			c0.09			0.03	
v/s Ratio Perm	0.01			0.05			0.06			0.01		
v/c Ratio	0.03	0.26		0.19	0.41		0.22	0.31		0.05	0.12	
Uniform Delay, d1	7.1	7.6		7.4	8.0		7.6	7.8		7.3	7.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.3		0.3	0.6		0.3	0.4		0.1	0.1	
Delay (s)	7.1	7.9		7.7	8.5		8.0	8.2		7.3	7.5	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		7.8			8.3			8.1			7.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	27.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	468	496	220	15	0	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	0.98			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3254			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3254			2601
Peak-hour factor, PHF	0.78	0.87	0.91	0.55	0.92	0.93
Adj. Flow (vph)	600	570	242	27	0	425
RTOR Reduction (vph)	0	0	12	0	0	385
Lane Group Flow (vph)	600	570	257	0	0	40
Confl. Peds. (#/hr)	2					
Turn Type	Prot					custom
Protected Phases	5	2	6			
Permitted Phases						4
Actuated Green, G (s)	24.0	40.7	10.7			5.5
Effective Green, g (s)	24.0	40.7	10.7			5.5
Actuated g/C Ratio	0.41	0.70	0.18			0.09
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	681	2310	598			246
v/s Ratio Prot	c0.36	0.17	c0.08			
v/s Ratio Perm						c0.02
v/c Ratio	0.88	0.25	0.43			0.16
Uniform Delay, d1	15.8	3.2	21.0			24.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	12.8	0.1	0.5			0.3
Delay (s)	28.6	3.2	21.5			24.5
Level of Service	C	A	C			C
Approach Delay (s)		16.2	21.5		24.5	
Approach LOS		B	C		C	

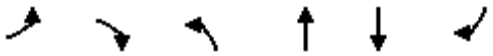
Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	322	46	99	141	88	134	725	98	19	352	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
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	0.94		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3245		1652	3100		1652	3245		1652	3202	
Flt Permitted	0.58	1.00		0.41	1.00		0.47	1.00		0.22	1.00	
Satd. Flow (perm)	1017	3245		715	3100		821	3245		376	3202	
Peak-hour factor, PHF	0.84	0.61	0.65	0.80	0.88	0.79	0.74	0.82	0.83	0.70	0.90	0.74
Adj. Flow (vph)	156	528	71	124	160	111	181	884	118	27	391	101
RTOR Reduction (vph)	0	22	0	0	45	0	0	21	0	0	46	0
Lane Group Flow (vph)	156	577	0	124	226	0	181	981	0	27	446	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.1	14.1		14.1	14.1		18.5	18.5		18.5	18.5	
Effective Green, g (s)	14.1	14.1		14.1	14.1		18.5	18.5		18.5	18.5	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.41	0.41		0.41	0.41	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	322	1026		226	980		341	1346		156	1328	
v/s Ratio Prot		c0.18			0.07			c0.30			0.14	
v/s Ratio Perm	0.15			0.17			0.22			0.07		
v/c Ratio	0.48	0.56		0.55	0.23		0.53	0.73		0.17	0.34	
Uniform Delay, d1	12.3	12.7		12.6	11.2		9.8	10.9		8.2	8.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.7		2.7	0.1		1.6	2.0		0.5	0.2	
Delay (s)	13.5	13.4		15.3	11.4		11.4	13.0		8.8	9.0	
Level of Service	B	B		B	B		B	B		A	A	
Approach Delay (s)		13.4			12.6			12.7			9.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	44.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	221	31	20	469	243	401
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3204	1478	1652	3303	3303	1478
Flt Permitted	0.95	1.00	0.57	1.00	1.00	1.00
Satd. Flow (perm)	3204	1478	999	3303	3303	1478
Peak-hour factor, PHF	0.76	0.58	0.54	0.81	0.84	0.93
Adj. Flow (vph)	291	53	37	579	289	431
RTOR Reduction (vph)	0	41	0	0	0	245
Lane Group Flow (vph)	291	12	37	579	289	186
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	8.0	8.0	15.2	15.2	15.2	15.2
Effective Green, g (s)	8.0	8.0	15.2	15.2	15.2	15.2
Actuated g/C Ratio	0.23	0.23	0.43	0.43	0.43	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	728	336	431	1426	1426	638
v/s Ratio Prot	c0.09			c0.18	0.09	
v/s Ratio Perm		0.01	0.04			0.13
v/c Ratio	0.40	0.04	0.09	0.41	0.20	0.29
Uniform Delay, d1	11.6	10.6	5.9	6.9	6.2	6.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.1	0.2	0.1	0.3
Delay (s)	11.9	10.6	6.0	7.1	6.3	6.8
Level of Service	B	B	A	A	A	A
Approach Delay (s)	11.7			7.0	6.6	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	35.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1	257	252	114	666	4	228	39	38	7	145	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3303	1478	1652	3296		1652	3106		1652	3296	
Flt Permitted	0.34	1.00	1.00	0.58	1.00		0.59	1.00		0.68	1.00	
Satd. Flow (perm)	592	3303	1478	1015	3296		1020	3106		1189	3296	
Peak-hour factor, PHF	0.25	0.94	0.89	0.82	0.91	0.38	0.76	0.60	0.88	0.42	0.55	0.25
Adj. Flow (vph)	4	273	283	139	732	11	300	65	43	17	264	4
RTOR Reduction (vph)	0	0	187	0	3	0	0	28	0	0	3	0
Lane Group Flow (vph)	4	273	96	139	740	0	300	80	0	17	265	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	12.9	12.9	12.9	12.9	12.9		13.3	13.3		13.3	13.3	
Effective Green, g (s)	12.9	12.9	12.9	12.9	12.9		13.3	13.3		13.3	13.3	
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34		0.35	0.35		0.35	0.35	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	200	1115	499	343	1113		355	1081		414	1148	
v/s Ratio Prot		0.08			c0.22			0.03			0.08	
v/s Ratio Perm	0.01		0.06	0.14			c0.29			0.01		
v/c Ratio	0.02	0.24	0.19	0.41	0.67		0.85	0.07		0.04	0.23	
Uniform Delay, d1	8.4	9.1	9.0	9.7	10.8		11.5	8.3		8.2	8.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.2	0.8	1.5		16.6	0.0		0.0	0.1	
Delay (s)	8.5	9.2	9.1	10.5	12.3		28.1	8.4		8.3	8.9	
Level of Service	A	A	A	B	B		C	A		A	A	
Approach Delay (s)		9.2			12.0			22.9			8.9	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	38.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	56	148	86	84	4	386	198	84	2	78	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00		1.00	0.95		1.00	0.99	
Flt Protected		0.99	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1715	1478		1690		1652	3147		1652	3269	
Flt Permitted		0.88	1.00		0.80		0.42	1.00		0.56	1.00	
Satd. Flow (perm)		1527	1478		1376		738	3147		966	3269	
Peak-hour factor, PHF	0.54	0.69	0.72	0.84	0.78	0.50	0.76	0.89	0.82	0.25	0.73	0.50
Adj. Flow (vph)	31	81	206	102	108	8	508	222	102	8	107	8
RTOR Reduction (vph)	0	0	157	0	2	0	0	47	0	0	7	0
Lane Group Flow (vph)	0	112	49	0	216	0	508	277	0	8	108	0
Turn Type	Perm		Perm	Perm			pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		12.7	12.7		12.7		29.0	29.0		10.0	10.0	
Effective Green, g (s)		12.7	12.7		12.7		29.0	29.0		10.0	10.0	
Actuated g/C Ratio		0.24	0.24		0.24		0.54	0.54		0.19	0.19	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		361	350		325		620	1699		180	609	
v/s Ratio Prot							c0.20	0.09			0.03	
v/s Ratio Perm		0.07	0.03		c0.16		c0.24			0.01		
v/c Ratio		0.31	0.14		0.66		0.82	0.16		0.04	0.18	
Uniform Delay, d1		16.9	16.2		18.6		8.8	6.2		17.9	18.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.2		5.0		8.3	0.0		0.1	0.1	
Delay (s)		17.4	16.4		23.6		17.1	6.3		18.0	18.5	
Level of Service		B	B		C		B	A		B	B	
Approach Delay (s)		16.7			23.6			12.9			18.5	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	45	93	631	28	27	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.91		0.99		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1552		3281		1652	3303
Flt Permitted	0.98		1.00		0.31	1.00
Satd. Flow (perm)	1552		3281		546	3303
Peak-hour factor, PHF	0.39	0.36	0.83	0.78	0.50	0.95
Adj. Flow (vph)	115	258	760	36	54	313
RTOR Reduction (vph)	40	0	8	0	0	0
Lane Group Flow (vph)	333	0	788	0	54	313
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	12.3		13.2		13.2	13.2
Effective Green, g (s)	12.3		13.2		13.2	13.2
Actuated g/C Ratio	0.33		0.35		0.35	0.35
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	509		1155		192	1163
v/s Ratio Prot	c0.21		c0.24			0.09
v/s Ratio Perm					0.10	
v/c Ratio	0.65		0.68		0.28	0.27
Uniform Delay, d1	10.8		10.4		8.7	8.7
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.0		1.7		0.8	0.1
Delay (s)	13.8		12.0		9.5	8.8
Level of Service	B		B		A	A
Approach Delay (s)	13.8		12.0			8.9
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	37.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2018

4-Lane Scenario

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	28	19	202	189	214	27	686	39	34	379	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00		0.95	
Frt		0.96		1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected		0.98		0.95	1.00	1.00		1.00	1.00		0.99	
Satd. Flow (prot)		3112		1652	1739	1478		3294	1478		3265	
Flt Permitted		0.82		0.69	1.00	1.00		0.89	1.00		0.78	
Satd. Flow (perm)		2581		1204	1739	1478		2941	1478		2555	
Peak-hour factor, PHF	0.54	0.75	0.70	0.84	0.72	0.73	0.55	0.87	0.66	0.57	0.86	0.56
Adj. Flow (vph)	31	37	27	240	262	293	49	789	59	60	441	21
RTOR Reduction (vph)	0	18	0	0	0	53	0	0	36	0	7	0
Lane Group Flow (vph)	0	77	0	240	262	240	0	838	23	0	515	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		13.3		13.3	13.3	13.3		15.9	15.9		15.9	
Effective Green, g (s)		13.3		13.3	13.3	13.3		15.9	15.9		15.9	
Actuated g/C Ratio		0.32		0.32	0.32	0.32		0.39	0.39		0.39	
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)		833		389	561	477		1135	570		986	
v/s Ratio Prot					0.15							
v/s Ratio Perm		0.03		c0.20		0.16		c0.28	0.02		0.20	
v/c Ratio		0.09		0.62	0.47	0.50		0.74	0.04		0.52	
Uniform Delay, d1		9.7		11.8	11.1	11.3		10.9	7.9		9.7	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.0		2.9	0.6	0.8		2.5	0.0		0.5	
Delay (s)		9.8		14.7	11.7	12.1		13.4	7.9		10.2	
Level of Service		A		B	B	B		B	A		B	
Approach Delay (s)		9.8			12.8			13.1			10.2	
Approach LOS		A			B			B			B	

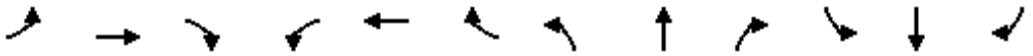
Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	47	115	4	43	5	103	781	9	15	291	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frt		0.92		1.00	0.99			1.00			0.98	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1591		1652	1718			3272			3224	
Flt Permitted		0.92		0.64	1.00			0.83			0.88	
Satd. Flow (perm)		1478		1110	1718			2743			2839	
Peak-hour factor, PHF	0.56	0.80	0.86	0.39	0.73	1.00	0.84	0.85	0.35	0.69	0.86	0.77
Adj. Flow (vph)	43	59	134	10	59	5	123	919	26	22	338	60
RTOR Reduction (vph)	0	101	0	0	4	0	0	3	0	0	25	0
Lane Group Flow (vph)	0	135	0	10	60	0	0	1065	0	0	395	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.0		11.0	11.0			24.8			24.8	
Effective Green, g (s)		11.0		11.0	11.0			24.8			24.8	
Actuated g/C Ratio		0.23		0.23	0.23			0.52			0.52	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		340		255	395			1423			1473	
v/s Ratio Prot					0.04							
v/s Ratio Perm		c0.09		0.01				c0.39			0.14	
v/c Ratio		0.40		0.04	0.15			0.75			0.27	
Uniform Delay, d1		15.6		14.3	14.7			9.0			6.4	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		0.8		0.1	0.2			2.2			0.1	
Delay (s)		16.4		14.4	14.9			11.2			6.5	
Level of Service		B		B	B			B			A	
Approach Delay (s)		16.4			14.8			11.2			6.5	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	909	59	0	389	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.96	0.65	0.92	0.88	0.87	0.92
Adj. Flow (vph)	947	91	0	442	91	0
RTOR Reduction (vph)	0	56	0	0	0	0
Lane Group Flow (vph)	947	35	0	442	91	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	13.6	13.6		13.6	10.0	
Effective Green, g (s)	13.6	13.6		13.6	10.0	
Actuated g/C Ratio	0.38	0.38		0.38	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1262	565		1262	464	
v/s Ratio Prot	c0.29			0.13	c0.06	
v/s Ratio Perm		0.02				
v/c Ratio	0.75	0.06		0.35	0.20	
Uniform Delay, d1	9.5	7.0		7.8	9.7	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.0		0.2	0.2	
Delay (s)	12.1	7.0		8.0	9.9	
Level of Service	B	A		A	A	
Approach Delay (s)	11.6			8.0	9.9	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	35.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



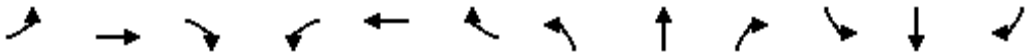
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	96	12	37	153	11	54	96	52	8	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.95		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)	1652	1698		1652	1698		1652	1655		1652	1739	
Flt Permitted	0.62	1.00		0.67	1.00		0.72	1.00		0.64	1.00	
Satd. Flow (perm)	1083	1698		1159	1698		1250	1655		1115	1739	
Peak-hour factor, PHF	0.25	0.80	0.55	0.59	0.84	0.32	0.71	0.77	0.88	0.58	0.60	1.00
Adj. Flow (vph)	8	120	22	63	182	34	76	125	59	14	58	0
RTOR Reduction (vph)	0	16	0	0	19	0	0	43	0	0	0	0
Lane Group Flow (vph)	8	126	0	63	197	0	76	141	0	14	58	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	7.9	7.9		7.9	7.9		7.7	7.7		7.7	7.7	
Effective Green, g (s)	7.9	7.9		7.9	7.9		7.7	7.7		7.7	7.7	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.28	0.28		0.28	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	310	486		332	486		349	462		311	485	
v/s Ratio Prot		0.07			c0.12			c0.09			0.03	
v/s Ratio Perm	0.01			0.05			0.06			0.01		
v/c Ratio	0.03	0.26		0.19	0.41		0.22	0.31		0.05	0.12	
Uniform Delay, d1	7.1	7.6		7.4	8.0		7.6	7.8		7.3	7.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.3		0.3	0.6		0.3	0.4		0.1	0.1	
Delay (s)	7.1	7.9		7.7	8.5		8.0	8.2		7.3	7.5	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		7.8			8.3			8.1			7.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	27.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	468	496	220	15	0	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	0.98			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3254			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3254			2601
Peak-hour factor, PHF	0.78	0.87	0.91	0.55	0.92	0.93
Adj. Flow (vph)	600	570	242	27	0	425
RTOR Reduction (vph)	0	0	12	0	0	385
Lane Group Flow (vph)	600	570	257	0	0	40
Confl. Peds. (#/hr)	2					
Turn Type	Prot					custom
Protected Phases	5	2	6			
Permitted Phases						4
Actuated Green, G (s)	24.0	40.7	10.7			5.5
Effective Green, g (s)	24.0	40.7	10.7			5.5
Actuated g/C Ratio	0.41	0.70	0.18			0.09
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	681	2310	598			246
v/s Ratio Prot	c0.36	0.17	c0.08			
v/s Ratio Perm						c0.02
v/c Ratio	0.88	0.25	0.43			0.16
Uniform Delay, d1	15.8	3.2	21.0			24.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	12.8	0.1	0.5			0.3
Delay (s)	28.6	3.2	21.5			24.5
Level of Service	C	A	C			C
Approach Delay (s)		16.2	21.5		24.5	
Approach LOS		B	C		C	

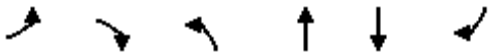
Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



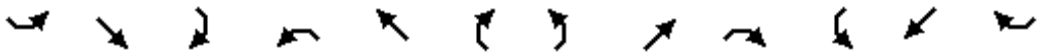
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	322	46	99	141	88	134	725	98	19	352	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.98		1.00	0.94			0.99			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1652	3245		1652	3100			3229			3199	
Flt Permitted	0.58	1.00		0.34	1.00			0.77			0.86	
Satd. Flow (perm)	1017	3245		594	3100			2496			2763	
Peak-hour factor, PHF	0.84	0.61	0.65	0.80	0.88	0.79	0.74	0.82	0.83	0.70	0.90	0.74
Adj. Flow (vph)	156	528	71	124	160	111	181	884	118	27	391	101
RTOR Reduction (vph)	0	18	0	0	82	0	0	14	0	0	35	0
Lane Group Flow (vph)	156	581	0	124	189	0	0	1169	0	0	484	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.7	14.7		14.7	14.7			29.9			29.9	
Effective Green, g (s)	14.7	14.7		14.7	14.7			29.9			29.9	
Actuated g/C Ratio	0.26	0.26		0.26	0.26			0.53			0.53	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	264	843		154	805			1319			1460	
v/s Ratio Prot		0.18			0.06							
v/s Ratio Perm	0.15			c0.21				c0.47			0.18	
v/c Ratio	0.59	0.69		0.81	0.23			0.89			0.33	
Uniform Delay, d1	18.3	18.9		19.6	16.5			11.8			7.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	3.5	2.4		25.5	0.2			7.5			0.1	
Delay (s)	21.8	21.3		45.1	16.7			19.3			7.8	
Level of Service	C	C		D	B			B			A	
Approach Delay (s)		21.4			25.6			19.3			7.8	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



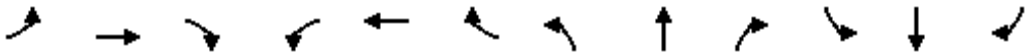
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	221	31	20	469	243	401
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00		0.95	0.95	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3204	1478		3293	3303	1478
Flt Permitted	0.95	1.00		0.92	1.00	1.00
Satd. Flow (perm)	3204	1478		3033	3303	1478
Peak-hour factor, PHF	0.76	0.58	0.54	0.81	0.84	0.93
Adj. Flow (vph)	291	53	37	579	289	431
RTOR Reduction (vph)	0	41	0	0	0	244
Lane Group Flow (vph)	291	12	0	616	289	187
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	8.0	8.0		15.4	15.4	15.4
Effective Green, g (s)	8.0	8.0		15.4	15.4	15.4
Actuated g/C Ratio	0.23	0.23		0.44	0.44	0.44
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	724	334		1319	1437	643
v/s Ratio Prot	c0.09				0.09	
v/s Ratio Perm		0.01		c0.20		0.13
v/c Ratio	0.40	0.04		0.47	0.20	0.29
Uniform Delay, d1	11.7	10.7		7.1	6.2	6.5
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0		0.3	0.1	0.3
Delay (s)	12.0	10.7		7.4	6.3	6.7
Level of Service	B	B		A	A	A
Approach Delay (s)	11.8			7.4	6.5	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	35.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1	257	252	114	666	4	228	39	38	7	145	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95	1.00		0.95		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00		1.00	0.94		1.00	1.00	
Flt Protected		1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3301	1478		3271		1652	3106		1652	3296	
Flt Permitted		0.94	1.00		0.84		0.59	1.00		0.68	1.00	
Satd. Flow (perm)		3106	1478		2754		1020	3106		1189	3296	
Peak-hour factor, PHF	0.25	0.94	0.89	0.82	0.91	0.38	0.76	0.60	0.88	0.42	0.55	0.25
Adj. Flow (vph)	4	273	283	139	732	11	300	65	43	17	264	4
RTOR Reduction (vph)	0	0	171	0	2	0	0	28	0	0	2	0
Lane Group Flow (vph)	0	277	112	0	880	0	300	80	0	17	266	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)		18.7	18.7		18.7		16.6	16.6		16.6	16.6	
Effective Green, g (s)		18.7	18.7		18.7		16.6	16.6		16.6	16.6	
Actuated g/C Ratio		0.40	0.40		0.40		0.35	0.35		0.35	0.35	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1228	584		1089		358	1090		417	1157	
v/s Ratio Prot								0.03			0.08	
v/s Ratio Perm		0.09	0.08		c0.32		c0.29			0.01		
v/c Ratio		0.23	0.19		0.81		0.84	0.07		0.04	0.23	
Uniform Delay, d1		9.5	9.4		12.7		14.1	10.2		10.1	10.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.2		4.5		15.6	0.0		0.0	0.1	
Delay (s)		9.6	9.5		17.2		29.7	10.3		10.1	10.9	
Level of Service		A	A		B		C	B		B	B	
Approach Delay (s)		9.6			17.2			24.6			10.9	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	56	148	86	84	4	386	198	84	2	78	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			6.0			6.0	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frt		1.00	0.85		1.00			0.98			0.99	
Flt Protected		0.99	1.00		0.98			0.97			1.00	
Satd. Flow (prot)		1715	1478		1690			3146			3260	
Flt Permitted		0.87	1.00		0.80			0.74			0.90	
Satd. Flow (perm)		1509	1478		1376			2386			2956	
Peak-hour factor, PHF	0.54	0.69	0.72	0.84	0.78	0.50	0.76	0.89	0.82	0.25	0.73	0.50
Adj. Flow (vph)	31	81	206	102	108	8	508	222	102	8	107	8
RTOR Reduction (vph)	0	0	161	0	3	0	0	20	0	0	4	0
Lane Group Flow (vph)	0	112	45	0	215	0	0	812	0	0	119	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		9.6	9.6		9.6			22.0			22.0	
Effective Green, g (s)		9.6	9.6		9.6			22.0			22.0	
Actuated g/C Ratio		0.22	0.22		0.22			0.50			0.50	
Clearance Time (s)		6.0	6.0		6.0			6.0			6.0	
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)		332	325		303			1204			1492	
v/s Ratio Prot												
v/s Ratio Perm		0.07	0.03		c0.16			c0.34			0.04	
v/c Ratio		0.34	0.14		0.71			0.67			0.08	
Uniform Delay, d1		14.3	13.7		15.7			8.1			5.6	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		0.6	0.2		7.4			1.5			0.0	
Delay (s)		14.9	13.9		23.1			9.6			5.6	
Level of Service		B	B		C			A			A	
Approach Delay (s)		14.2			23.1			9.6			5.6	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

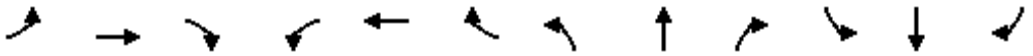
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	45	93	631	28	27	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frt	0.91		0.99			1.00
Flt Protected	0.98		1.00			0.99
Satd. Flow (prot)	1552		3281			3279
Flt Permitted	0.98		1.00			0.76
Satd. Flow (perm)	1552		3281			2504
Peak-hour factor, PHF	0.39	0.36	0.83	0.78	0.50	0.95
Adj. Flow (vph)	115	258	760	36	54	313
RTOR Reduction (vph)	40	0	8	0	0	0
Lane Group Flow (vph)	333	0	788	0	0	367
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	12.3		13.2			13.2
Effective Green, g (s)	12.3		13.2			13.2
Actuated g/C Ratio	0.33		0.35			0.35
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	509		1155			881
v/s Ratio Prot	c0.21		c0.24			
v/s Ratio Perm						0.15
v/c Ratio	0.65		0.68			0.42
Uniform Delay, d1	10.8		10.4			9.2
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	3.0		1.7			0.3
Delay (s)	13.8		12.0			9.5
Level of Service	B		B			A
Approach Delay (s)	13.8		12.0			9.5
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	37.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2018

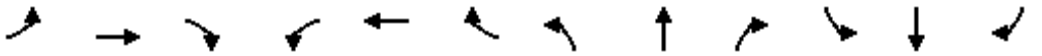
3-Lane Scenario

PM Peak Hour



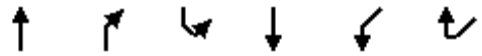
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	28	19	202	189	214	27	686	39	34	379	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3334		1770	1863	1583	1770	1863	1583	1770	1850	
Flt Permitted		0.81		0.69	1.00	1.00	0.44	1.00	1.00	0.17	1.00	
Satd. Flow (perm)		2740		1290	1863	1583	826	1863	1583	325	1850	
Peak-hour factor, PHF	0.54	0.75	0.70	0.84	0.72	0.73	0.55	0.87	0.66	0.57	0.86	0.56
Adj. Flow (vph)	31	37	27	240	262	293	49	789	59	60	441	21
RTOR Reduction (vph)	0	20	0	0	0	123	0	0	29	0	3	0
Lane Group Flow (vph)	0	75	0	240	262	170	49	789	30	60	459	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		13.8		13.8	13.8	13.8	26.9	26.9	26.9	26.9	26.9	
Effective Green, g (s)		13.8		13.8	13.8	13.8	26.9	26.9	26.9	26.9	26.9	
Actuated g/C Ratio		0.26		0.26	0.26	0.26	0.51	0.51	0.51	0.51	0.51	
Clearance Time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		717		338	488	415	422	951	808	166	944	
v/s Ratio Prot					0.14			c0.42			0.25	
v/s Ratio Perm		0.03		c0.19		0.11	0.06		0.02	0.18		
v/c Ratio		0.10		0.71	0.54	0.41	0.12	0.83	0.04	0.36	0.49	
Uniform Delay, d1		14.8		17.6	16.7	16.1	6.7	11.0	6.4	7.7	8.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1		6.9	1.1	0.7	0.1	6.1	0.0	1.3	0.4	
Delay (s)		14.8		24.5	17.8	16.8	6.8	17.0	6.5	9.1	8.8	
Level of Service		B		C	B	B	A	B	A	A	A	
Approach Delay (s)		14.8			19.5			15.8			8.8	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



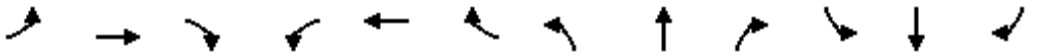
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	47	115	4	43	5	103	781	9	15	291	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.92		1.00	0.99		1.00	1.00		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1704		1770	1841		1770	1855		1770	1821	
Flt Permitted		0.92		0.56	1.00		0.52	1.00		0.13	1.00	
Satd. Flow (perm)		1584		1044	1841		964	1855		243	1821	
Peak-hour factor, PHF	0.56	0.80	0.86	0.39	0.73	1.00	0.84	0.85	0.35	0.69	0.86	0.77
Adj. Flow (vph)	43	59	134	10	59	5	123	919	26	22	338	60
RTOR Reduction (vph)	0	82	0	0	4	0	0	2	0	0	10	0
Lane Group Flow (vph)	0	154	0	10	60	0	123	943	0	22	388	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.4		11.4	11.4		33.7	33.7		33.7	33.7	
Effective Green, g (s)		11.4		11.4	11.4		33.7	33.7		33.7	33.7	
Actuated g/C Ratio		0.20		0.20	0.20		0.59	0.59		0.59	0.59	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		316		208	368		569	1095		143	1075	
v/s Ratio Prot					0.03			c0.51			0.21	
v/s Ratio Perm		c0.10		0.01			0.13			0.09		
v/c Ratio		0.49		0.05	0.16		0.22	0.86		0.15	0.36	
Uniform Delay, d1		20.3		18.5	18.9		5.5	9.8		5.3	6.1	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2		0.1	0.2		0.2	7.1		0.5	0.2	
Delay (s)		21.4		18.6	19.1		5.7	16.9		5.8	6.3	
Level of Service		C		B	B		A	B		A	A	
Approach Delay (s)		21.4			19.0			15.6			6.3	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	909	59	0	389	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	1863	1583		1863	1770	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	1863	1583		1863	1770	
Peak-hour factor, PHF	0.96	0.65	0.92	0.88	0.87	0.92
Adj. Flow (vph)	947	91	0	442	91	0
RTOR Reduction (vph)	0	38	0	0	0	0
Lane Group Flow (vph)	947	53	0	442	91	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	31.0	31.0		31.0	10.3	
Effective Green, g (s)	31.0	31.0		31.0	10.3	
Actuated g/C Ratio	0.58	0.58		0.58	0.19	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1084	921		1084	342	
v/s Ratio Prot	c0.51			0.24	c0.05	
v/s Ratio Perm		0.03				
v/c Ratio	0.87	0.06		0.41	0.27	
Uniform Delay, d1	9.5	4.8		6.1	18.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.0	0.0		0.3	0.4	
Delay (s)	17.5	4.9		6.4	18.7	
Level of Service	B	A		A	B	
Approach Delay (s)	16.4			6.4	18.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



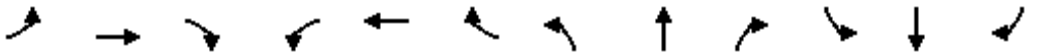
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	96	12	37	153	11	54	86	52	8	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.95		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)	1770	1819		1770	1819		1770	1766		1770	1863	
Flt Permitted	0.62	1.00		0.67	1.00		0.72	1.00		0.65	1.00	
Satd. Flow (perm)	1161	1819		1241	1819		1340	1766		1209	1863	
Peak-hour factor, PHF	0.25	0.80	0.55	0.59	0.84	0.32	0.71	0.77	0.88	0.58	0.60	1.00
Adj. Flow (vph)	8	120	22	63	182	34	76	112	59	14	58	0
RTOR Reduction (vph)	0	16	0	0	19	0	0	43	0	0	0	0
Lane Group Flow (vph)	8	126	0	63	197	0	76	128	0	14	58	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	7.8	7.8		7.8	7.8		7.4	7.4		7.4	7.4	
Effective Green, g (s)	7.8	7.8		7.8	7.8		7.4	7.4		7.4	7.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	333	522		356	522		365	480		329	507	
v/s Ratio Prot		0.07			c0.11			c0.07			0.03	
v/s Ratio Perm	0.01			0.05			0.06			0.01		
v/c Ratio	0.02	0.24		0.18	0.38		0.21	0.27		0.04	0.11	
Uniform Delay, d1	7.0	7.4		7.3	7.8		7.6	7.8		7.3	7.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2		0.2	0.5		0.3	0.3		0.1	0.1	
Delay (s)	7.0	7.7		7.5	8.2		7.9	8.1		7.3	7.5	
Level of Service	A	A		A	A		A	A		A	A	
Approach Delay (s)		7.6			8.1			8.0			7.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	27.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	468	496	220	15	0	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	1.00	1.00			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	0.99			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	1863	1838			2787
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	1863	1838			2787
Peak-hour factor, PHF	0.78	0.87	0.91	0.55	0.92	0.93
Adj. Flow (vph)	600	570	242	27	0	425
RTOR Reduction (vph)	0	0	6	0	0	386
Lane Group Flow (vph)	600	570	263	0	0	39
Confl. Peds. (#/hr)	2					
Turn Type	Prot					custom
Protected Phases	5	2	6			
Permitted Phases						4
Actuated Green, G (s)	24.0	42.8	12.8			5.5
Effective Green, g (s)	24.0	42.8	12.8			5.5
Actuated g/C Ratio	0.40	0.71	0.21			0.09
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	704	1322	390			254
v/s Ratio Prot	c0.34	0.31	c0.14			
v/s Ratio Perm						c0.01
v/c Ratio	0.85	0.43	0.68			0.15
Uniform Delay, d1	16.5	3.7	21.8			25.3
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	9.8	0.2	4.6			0.3
Delay (s)	26.3	3.9	26.4			25.5
Level of Service	C	A	C			C
Approach Delay (s)		15.4	26.4		25.5	
Approach LOS		B	C		C	

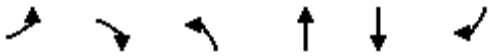
Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	322	46	99	141	88	134	725	98	19	352	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.94		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3476		1770	3322		1770	1830		1770	1805	
Flt Permitted	0.58	1.00		0.30	1.00		0.42	1.00		0.10	1.00	
Satd. Flow (perm)	1089	3476		564	3322		789	1830		190	1805	
Peak-hour factor, PHF	0.84	0.61	0.65	0.80	0.88	0.79	0.74	0.82	0.83	0.70	0.90	0.74
Adj. Flow (vph)	156	528	71	124	160	111	181	884	118	27	391	101
RTOR Reduction (vph)	0	15	0	0	83	0	0	7	0	0	14	0
Lane Group Flow (vph)	156	584	0	124	188	0	181	995	0	27	478	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.9	16.9		16.9	16.9		39.2	39.2		39.2	39.2	
Effective Green, g (s)	16.9	16.9		16.9	16.9		39.2	39.2		39.2	39.2	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.58	0.58		0.58	0.58	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	270	863		140	824		454	1053		109	1039	
v/s Ratio Prot		0.17			0.06			c0.54			0.26	
v/s Ratio Perm	0.14			c0.22			0.23			0.14		
v/c Ratio	0.58	0.68		0.89	0.23		0.40	0.94		0.25	0.46	
Uniform Delay, d1	22.5	23.1		24.7	20.4		8.0	13.4		7.2	8.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	2.1		43.6	0.1		0.6	16.1		1.2	0.3	
Delay (s)	25.5	25.2		68.3	20.5		8.5	29.5		8.3	8.7	
Level of Service	C	C		E	C		A	C		A	A	
Approach Delay (s)		25.3			35.5			26.3			8.7	
Approach LOS		C			D			C			A	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

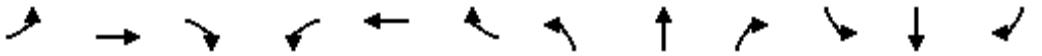


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	221	31	20	469	243	401
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.58	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1086	1863	1863	1583
Peak-hour factor, PHF	0.76	0.58	0.54	0.81	0.84	0.93
Adj. Flow (vph)	291	53	37	579	289	431
RTOR Reduction (vph)	0	38	0	0	0	245
Lane Group Flow (vph)	291	15	37	579	289	186
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	12.0	12.0	18.3	18.3	18.3	18.3
Effective Green, g (s)	12.0	12.0	18.3	18.3	18.3	18.3
Actuated g/C Ratio	0.28	0.28	0.43	0.43	0.43	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	502	449	470	806	806	685
v/s Ratio Prot	c0.16			c0.31	0.16	
v/s Ratio Perm		0.01	0.03			0.12
v/c Ratio	0.58	0.03	0.08	0.72	0.36	0.27
Uniform Delay, d1	13.0	11.0	7.0	9.9	8.1	7.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.0	0.1	3.1	0.3	0.2
Delay (s)	14.6	11.0	7.1	13.0	8.3	7.9
Level of Service	B	B	A	B	A	A
Approach Delay (s)	14.1			12.6	8.1	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1	257	252	114	666	4	228	39	38	7	145	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1859		1770	3328		1770	3531	
Flt Permitted	0.16	1.00	1.00	0.59	1.00		0.59	1.00		0.68	1.00	
Satd. Flow (perm)	293	1863	1583	1102	1859		1093	3328		1274	3531	
Peak-hour factor, PHF	0.25	0.94	0.89	0.82	0.91	0.38	0.76	0.60	0.88	0.42	0.55	0.25
Adj. Flow (vph)	4	273	283	139	732	11	300	65	43	17	264	4
RTOR Reduction (vph)	0	0	154	0	1	0	0	29	0	0	2	0
Lane Group Flow (vph)	4	273	129	139	742	0	300	79	0	17	266	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	25.4	25.4	25.4	25.4	25.4		18.2	18.2		18.2	18.2	
Effective Green, g (s)	25.4	25.4	25.4	25.4	25.4		18.2	18.2		18.2	18.2	
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.46		0.33	0.33		0.33	0.33	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	134	851	723	503	849		358	1089		417	1156	
v/s Ratio Prot		0.15			c0.40			0.02			0.08	
v/s Ratio Perm	0.01		0.08	0.13			c0.27			0.01		
v/c Ratio	0.03	0.32	0.18	0.28	0.87		0.84	0.07		0.04	0.23	
Uniform Delay, d1	8.3	9.6	8.9	9.4	13.7		17.3	12.9		12.7	13.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2	0.1	0.3	9.9		15.6	0.0		0.0	0.1	
Delay (s)	8.4	9.8	9.1	9.7	23.6		32.9	12.9		12.8	13.7	
Level of Service	A	A	A	A	C		C	B		B	B	
Approach Delay (s)		9.4			21.4			27.6			13.7	
Approach LOS		A			C			C			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	56	148	86	84	4	386	198	84	2	78	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.95		1.00	0.99	
Flt Protected		0.99	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1837	1583		1811		1770	1775		1770	1843	
Flt Permitted		0.86	1.00		0.80		0.68	1.00		0.56	1.00	
Satd. Flow (perm)		1604	1583		1475		1272	1775		1052	1843	
Peak-hour factor, PHF	0.54	0.69	0.72	0.84	0.78	0.50	0.76	0.89	0.82	0.25	0.73	0.50
Adj. Flow (vph)	31	81	206	102	108	8	508	222	102	8	107	8
RTOR Reduction (vph)	0	0	166	0	2	0	0	27	0	0	4	0
Lane Group Flow (vph)	0	112	40	0	216	0	508	297	0	8	111	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		9.4	9.4		9.4		27.1	27.1		27.1	27.1	
Effective Green, g (s)		9.4	9.4		9.4		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.19	0.19		0.19		0.56	0.56		0.56	0.56	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		311	307		286		711	992		588	1030	
v/s Ratio Prot								0.17			0.06	
v/s Ratio Perm		0.07	0.03		c0.15		c0.40			0.01		
v/c Ratio		0.36	0.13		0.75		0.71	0.30		0.01	0.11	
Uniform Delay, d1		16.9	16.2		18.5		7.9	5.7		4.8	5.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.2		10.7		3.4	0.2		0.0	0.0	
Delay (s)		17.7	16.4		29.2		11.3	5.8		4.8	5.1	
Level of Service		B	B		C		B	A		A	A	
Approach Delay (s)		16.8			29.2			9.2			5.1	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

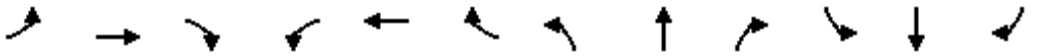
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	45	93	631	28	27	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.91		0.99		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1663		1851		1770	1863
Flt Permitted	0.98		1.00		0.18	1.00
Satd. Flow (perm)	1663		1851		334	1863
Peak-hour factor, PHF	0.39	0.36	0.83	0.78	0.50	0.95
Adj. Flow (vph)	115	258	760	36	54	313
RTOR Reduction (vph)	133	0	3	0	0	0
Lane Group Flow (vph)	240	0	793	0	54	313
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	12.2		25.9		25.9	25.9
Effective Green, g (s)	12.2		25.9		25.9	25.9
Actuated g/C Ratio	0.24		0.52		0.52	0.52
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	405		957		173	963
v/s Ratio Prot	c0.14		c0.43			0.17
v/s Ratio Perm					0.16	
v/c Ratio	0.59		0.83		0.31	0.33
Uniform Delay, d1	16.8		10.2		7.0	7.0
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.3		6.0		1.0	0.2
Delay (s)	19.1		16.2		8.0	7.2
Level of Service	B		B		A	A
Approach Delay (s)	19.1		16.2			7.3
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2025

5-Lane Scenario

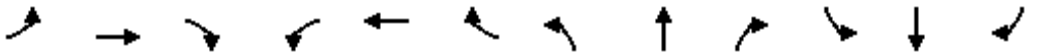
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	18	18	203	122	209	49	1282	99	82	535	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1685	1512		1554	1637	1463	1685	3303	1422	1491	3283	
Flt Permitted	0.64	1.00		0.42	0.77	1.00	0.42	1.00	1.00	0.09	1.00	
Satd. Flow (perm)	1130	1512		683	1273	1463	747	3303	1422	136	3283	
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)	35	20	20	221	133	227	53	1393	108	89	582	28
RTOR Reduction (vph)	0	18	0	0	0	188	0	0	40	0	3	0
Lane Group Flow (vph)	35	22	0	172	182	39	53	1393	68	89	607	0
Heavy Vehicles (%)	0%	17%	0%	3%	1%	3%	0%	2%	6%	13%	2%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	12.1	8.0		25.5	25.5	15.4	42.5	40.3	40.3	52.8	46.6	
Effective Green, g (s)	12.1	8.0		25.5	25.5	15.4	42.5	40.3	40.3	52.8	46.6	
Actuated g/C Ratio	0.13	0.09		0.28	0.28	0.17	0.47	0.45	0.45	0.58	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	177	134		304	406	250	374	1474	635	177	1694	
v/s Ratio Prot	0.01	0.01		c0.07	0.06		0.00	c0.42		c0.04	0.18	
v/s Ratio Perm	0.02			c0.09	0.07	0.03	0.06		0.05	0.26		
v/c Ratio	0.20	0.16		0.57	0.45	0.15	0.14	0.95	0.11	0.50	0.36	
Uniform Delay, d1	34.6	38.1		26.4	26.6	31.9	13.1	23.9	14.5	16.2	13.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.6		2.4	0.8	0.3	0.2	12.6	0.1	2.2	0.1	
Delay (s)	35.1	38.6		28.8	27.4	32.2	13.2	36.5	14.6	18.4	13.1	
Level of Service	D	D		C	C	C	B	D	B	B	B	
Approach Delay (s)		37.0			29.7			34.2			13.8	
Approach LOS		D			C			C			B	

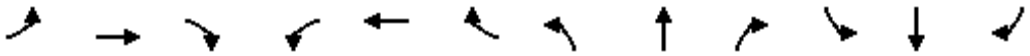
Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	12	5	201	63	556	5	850	113	300	426	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	1739	1478	1652	1739	1478	1652	3245		1652	3298	
Flt Permitted	0.71	1.00	1.00	0.46	1.00	1.00	0.48	1.00		0.11	1.00	
Satd. Flow (perm)	1239	1739	1478	792	1739	1478	840	3245		189	3298	
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)	11	13	5	218	68	604	5	924	123	326	463	5
RTOR Reduction (vph)	0	0	5	0	0	279	0	11	0	0	1	0
Lane Group Flow (vph)	11	13	0	218	68	325	5	1036	0	326	467	0
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	6.9	6.2	6.2	25.4	20.7	20.7	33.5	32.8		51.3	46.6	
Effective Green, g (s)	6.9	6.2	6.2	25.4	20.7	20.7	33.5	32.8		51.3	46.6	
Actuated g/C Ratio	0.08	0.07	0.07	0.30	0.24	0.24	0.40	0.39		0.61	0.55	
Clearance Time (s)	4.0	4.0	4.0	4.0	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	3.0		3.0	3.0	
Lane Grp Cap (vph)	104	127	108	392	425	361	339	1257		365	1814	
v/s Ratio Prot	0.00	0.01		c0.10	0.04		0.00	0.32		c0.15	0.14	
v/s Ratio Perm	0.01		0.00	0.07		c0.22	0.01			c0.39		
v/c Ratio	0.11	0.10	0.00	0.56	0.16	0.90	0.01	0.82		0.89	0.26	
Uniform Delay, d1	36.0	36.7	36.4	24.0	25.2	31.0	15.5	23.4		22.4	10.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4	0.0	1.7	0.2	24.5	0.0	4.5		23.0	0.1	
Delay (s)	36.4	37.0	36.4	25.7	25.3	55.5	15.5	27.9		45.4	10.1	
Level of Service	D	D	D	C	C	E	B	C		D	B	
Approach Delay (s)		36.7			45.9			27.8			24.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

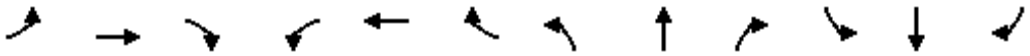


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	55	135	5	50	6	172	1557	14	40	824	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt		0.92		1.00	0.98		1.00	1.00		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1583		1652	1709		1652	3299		1652	3236	
Flt Permitted		0.95		0.48	1.00		0.17	1.00		0.13	1.00	
Satd. Flow (perm)		1508		831	1709		290	3299		230	3236	
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)	30	60	147	5	54	7	187	1692	15	43	896	140
RTOR Reduction (vph)	0	86	0	0	6	0	0	1	0	0	17	0
Lane Group Flow (vph)	0	151	0	5	55	0	187	1706	0	43	1019	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)		11.8		11.8	11.8		42.5	36.3		32.5	30.3	
Effective Green, g (s)		11.8		11.8	11.8		42.5	36.3		32.5	30.3	
Actuated g/C Ratio		0.18		0.18	0.18		0.64	0.55		0.49	0.46	
Clearance Time (s)		6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		268		148	304		354	1806		160	1479	
v/s Ratio Prot					0.03		c0.07	c0.52		0.01	0.31	
v/s Ratio Perm		c0.10		0.01			0.27			0.12		
v/c Ratio		0.56		0.03	0.18		0.53	0.94		0.27	0.69	
Uniform Delay, d1		24.9		22.5	23.1		7.1	14.1		11.5	14.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.7		0.1	0.3		1.4	10.7		0.9	1.4	
Delay (s)		27.6		22.6	23.4		8.5	24.8		12.4	15.6	
Level of Service		C		C	C		A	C		B	B	
Approach Delay (s)		27.6			23.4			23.2			15.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	1582	91	0	750	92	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1720	99	0	815	100	0
RTOR Reduction (vph)	0	40	0	0	0	0
Lane Group Flow (vph)	1720	59	0	815	100	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	33.3	33.3		33.3	10.4	
Effective Green, g (s)	33.3	33.3		33.3	10.4	
Actuated g/C Ratio	0.60	0.60		0.60	0.19	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1975	884		1975	308	
v/s Ratio Prot	c0.52			0.25	c0.06	
v/s Ratio Perm		0.04				
v/c Ratio	0.87	0.07		0.41	0.32	
Uniform Delay, d1	9.4	4.7		6.0	19.6	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.5	0.0		0.1	0.6	
Delay (s)	13.9	4.7		6.1	20.2	
Level of Service	B	A		A	C	
Approach Delay (s)	13.4			6.1	20.2	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	135	30	90	214	16	190	135	190	11	87	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.92		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)	1652	1675		1652	1696		1652	1594		1652	1739	
Flt Permitted	0.57	1.00		0.62	1.00		0.66	1.00		0.53	1.00	
Satd. Flow (perm)	999	1675		1075	1696		1155	1594		923	1739	
Peak-hour factor, PHF	0.25	0.80	0.55	0.59	0.84	0.32	0.71	0.77	0.88	0.58	0.60	1.00
Adj. Flow (vph)	12	169	55	153	255	50	268	175	216	19	145	0
RTOR Reduction (vph)	0	33	0	0	20	0	0	105	0	0	0	0
Lane Group Flow (vph)	12	191	0	153	285	0	268	287	0	19	145	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.9	8.9		8.9	8.9		13.3	13.3		13.3	13.3	
Effective Green, g (s)	8.9	8.9		8.9	8.9		13.3	13.3		13.3	13.3	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.39	0.39		0.39	0.39	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	260	436		280	441		449	620		359	676	
v/s Ratio Prot		0.11			c0.17			0.18			0.08	
v/s Ratio Perm	0.01			0.14			c0.23			0.02		
v/c Ratio	0.05	0.44		0.55	0.65		0.60	0.46		0.05	0.21	
Uniform Delay, d1	9.5	10.6		10.9	11.3		8.3	7.8		6.5	7.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.7		2.2	3.2		2.1	0.5		0.1	0.2	
Delay (s)	9.5	11.3		13.1	14.5		10.5	8.3		6.6	7.1	
Level of Service	A	B		B	B		B	A		A	A	
Approach Delay (s)		11.2			14.0			9.2			7.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	34.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	925	998	612	0	0	990
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3303			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3303			2601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1005	1085	665	0	0	1076
RTOR Reduction (vph)	0	0	0	0	0	13
Lane Group Flow (vph)	1005	1085	665	0	0	1063
Confl. Peds. (#/hr)	2					
Turn Type	Prot					Over
Protected Phases	5	2	6			5
Permitted Phases						
Actuated Green, G (s)	66.4	102.0	23.6			66.4
Effective Green, g (s)	66.4	102.0	23.6			66.4
Actuated g/C Ratio	0.65	1.00	0.23			0.65
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1075	3303	764			1693
v/s Ratio Prot	c0.61	0.33	c0.20			0.41
v/s Ratio Perm						
v/c Ratio	0.93	0.33	0.87			0.63
Uniform Delay, d1	15.9	0.0	37.7			10.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	14.3	0.1	10.6			0.7
Delay (s)	30.2	0.1	48.3			11.2
Level of Service	C	A	D			B
Approach Delay (s)		14.6	48.3		11.2	
Approach LOS		B	D		B	

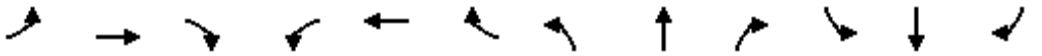
Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	925	998	612	0	0	990
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	3539	3539			2787
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	3539	3539			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1005	1085	665	0	0	1076
RTOR Reduction (vph)	0	0	0	0	0	13
Lane Group Flow (vph)	1005	1085	665	0	0	1063
Confl. Peds. (#/hr)	2					
Turn Type	Prot					Over
Protected Phases	5	2	6			5
Permitted Phases						
Actuated Green, G (s)	60.4	94.8	22.4			60.4
Effective Green, g (s)	60.4	94.8	22.4			60.4
Actuated g/C Ratio	0.64	1.00	0.24			0.64
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1128	3539	836			1776
v/s Ratio Prot	c0.57	0.31	c0.19			0.38
v/s Ratio Perm						
v/c Ratio	0.89	0.31	0.80			0.60
Uniform Delay, d1	14.4	0.0	34.0			10.1
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	9.1	0.0	5.3			0.5
Delay (s)	23.5	0.0	39.3			10.6
Level of Service	C	A	D			B
Approach Delay (s)		11.3	39.3		10.6	
Approach LOS		B	D		B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	94.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

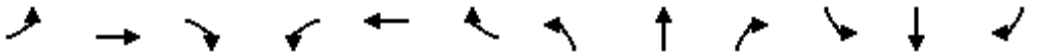


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	174	163	138	384	86	400	1267	101	74	618	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.97		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3064		1652	3213		1652	3269		1652	3199	
Flt Permitted	0.15	1.00		0.53	1.00		0.10	1.00		0.11	1.00	
Satd. Flow (perm)	265	3064		928	3213		168	3269		186	3199	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.00	0.92	0.92	0.92
Adj. Flow (vph)	283	189	177	150	417	93	435	1377	101	80	672	179
RTOR Reduction (vph)	0	122	0	0	13	0	0	4	0	0	17	0
Lane Group Flow (vph)	283	244	0	150	497	0	435	1474	0	80	834	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	48.9	33.6		33.9	22.6		75.1	65.1		43.4	37.4	
Effective Green, g (s)	48.9	33.6		33.9	22.6		75.1	65.1		43.4	37.4	
Actuated g/C Ratio	0.36	0.25		0.25	0.17		0.55	0.48		0.32	0.27	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	323	757		291	534		460	1565		124	880	
v/s Ratio Prot	c0.14	0.08		0.04	0.15		c0.23	0.45		0.03	0.26	
v/s Ratio Perm	c0.17			0.09			c0.29			0.18		
v/c Ratio	0.88	0.32		0.52	0.93		0.95	0.94		0.65	0.95	
Uniform Delay, d1	36.8	41.9		42.2	55.9		40.5	33.7		35.0	48.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.3	0.2		1.5	23.0		28.5	11.7		11.0	18.7	
Delay (s)	59.1	42.1		43.7	78.9		68.9	45.3		46.0	67.1	
Level of Service	E	D		D	E		E	D		D	E	
Approach Delay (s)		49.5			70.9			50.7			65.3	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM Average Control Delay	57.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	136.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	6	599	418	253	1312	26	21	206	63	331	115	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3303	1478	1652	3294		1652	3188		1652	3141	
Flt Permitted	0.14	1.00	1.00	0.26	1.00		0.63	1.00		0.57	1.00	
Satd. Flow (perm)	237	3303	1478	447	3294		1103	3188		996	3141	
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)	7	651	454	275	1426	28	23	224	68	360	125	61
RTOR Reduction (vph)	0	0	258	0	2	0	0	31	0	0	40	0
Lane Group Flow (vph)	7	651	196	275	1452	0	23	261	0	360	146	0
Turn Type	pm+pt		Perm	pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	30.1	29.3	29.3	46.3	41.5		31.1	31.1		31.1	31.1	
Effective Green, g (s)	30.1	29.3	29.3	46.3	41.5		31.1	31.1		31.1	31.1	
Actuated g/C Ratio	0.34	0.33	0.33	0.52	0.46		0.35	0.35		0.35	0.35	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	92	1083	484	407	1529		384	1109		346	1093	
v/s Ratio Prot	0.00	0.20		c0.10	c0.44			0.08			0.05	
v/s Ratio Perm	0.02		0.13	0.25			0.02			c0.36		
v/c Ratio	0.08	0.60	0.40	0.68	0.95		0.06	0.24		1.04	0.13	
Uniform Delay, d1	21.4	25.2	23.3	13.8	23.0		19.4	20.7		29.2	19.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.9	0.6	4.4	12.9		0.1	0.1		59.3	0.1	
Delay (s)	21.8	26.1	23.8	18.2	35.8		19.5	20.8		88.4	20.0	
Level of Service	C	C	C	B	D		B	C		F	B	
Approach Delay (s)		25.2			33.0			20.7			65.1	
Approach LOS		C			C			C			E	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	89.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	78	372	218	117	6	846	438	175	3	198	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00		1.00	0.96		1.00	0.99	
Flt Protected		0.98	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1698	1478		1680		1652	3162		1652	3277	
Flt Permitted		0.74	1.00		0.70		0.48	1.00		0.40	1.00	
Satd. Flow (perm)		1292	1478		1213		835	3162		693	3277	
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	0.50
Adj. Flow (vph)	76	85	404	237	127	7	920	476	190	3	215	12
RTOR Reduction (vph)	0	0	293	0	1	0	0	43	0	0	4	0
Lane Group Flow (vph)	0	161	111	0	370	0	920	623	0	3	223	0
Turn Type	Perm		Perm	Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		25.0	25.0		25.0		53.8	49.0		15.6	14.8	
Effective Green, g (s)		25.0	25.0		25.0		53.8	49.0		15.6	14.8	
Actuated g/C Ratio		0.28	0.28		0.28		0.59	0.54		0.17	0.16	
Clearance Time (s)		6.0	6.0		6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		356	407		334		810	1706		128	534	
v/s Ratio Prot							c0.44	0.20		0.00	0.07	
v/s Ratio Perm		0.12	0.08		c0.31		c0.24			0.00		
v/c Ratio		0.45	0.27		1.11		1.14	0.37		0.02	0.42	
Uniform Delay, d1		27.2	25.8		32.9		15.3	12.0		31.3	34.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.4		81.8		76.0	0.1		0.1	0.5	
Delay (s)		28.1	26.1		114.7		91.3	12.1		31.3	34.7	
Level of Service		C	C		F		F	B		C	C	
Approach Delay (s)		26.7			114.7			58.1			34.6	
Approach LOS		C			F			E			C	

Intersection Summary			
HCM Average Control Delay	57.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

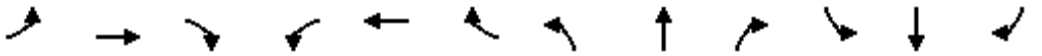
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	63	130	1381	39	38	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.91		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1555		3290		1652	3303
Flt Permitted	0.98		1.00		0.12	1.00
Satd. Flow (perm)	1555		3290		203	3303
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	141	1501	42	41	815
RTOR Reduction (vph)	24	0	3	0	0	0
Lane Group Flow (vph)	185	0	1540	0	41	815
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	12.0		34.3		34.3	34.3
Effective Green, g (s)	12.0		34.3		34.3	34.3
Actuated g/C Ratio	0.21		0.59		0.59	0.59
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	320		1936		119	1943
v/s Ratio Prot	c0.12		c0.47			0.25
v/s Ratio Perm					0.20	
v/c Ratio	0.58		0.80		0.34	0.42
Uniform Delay, d1	20.9		9.3		6.2	6.6
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.5		2.3		1.7	0.1
Delay (s)	23.4		11.6		7.9	6.7
Level of Service	C		B		A	A
Approach Delay (s)	23.4		11.6			6.8
Approach LOS	C		B			A

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

2025

4-Lane Scenario

PM Peak Hour

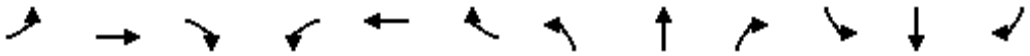


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	18	18	203	122	209	49	1282	99	82	535	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.95	1.00		0.95	
Frt	1.00	0.93		1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected	0.95	1.00		0.95	0.99	1.00		1.00	1.00		0.99	
Satd. Flow (prot)	1685	1512		1554	1637	1463		3300	1422		3221	
Flt Permitted	0.64	1.00		0.45	0.87	1.00		0.89	1.00		0.55	
Satd. Flow (perm)	1130	1512		730	1451	1463		2957	1422		1780	
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)	35	20	20	221	133	227	53	1393	108	89	582	28
RTOR Reduction (vph)	0	18	0	0	0	135	0	0	54	0	4	0
Lane Group Flow (vph)	35	22	0	172	182	92	0	1446	54	0	695	0
Heavy Vehicles (%)	0%	17%	0%	3%	1%	3%	0%	2%	6%	13%	2%	0%
Turn Type	pm+pt			pm+pt		Perm	Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	12.2	9.4		26.6	26.6	17.8		37.3	37.3		37.3	
Effective Green, g (s)	12.2	9.4		26.6	26.6	17.8		37.3	37.3		37.3	
Actuated g/C Ratio	0.16	0.12		0.35	0.35	0.23		0.49	0.49		0.49	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	202	187		377	536	343		1453	699		875	
v/s Ratio Prot	0.01	0.01		c0.07	0.05							
v/s Ratio Perm	0.02			c0.09	0.07	0.06		c0.49	0.04		0.39	
v/c Ratio	0.17	0.12		0.46	0.34	0.27		1.00	0.08		0.99dl	
Uniform Delay, d1	27.3	29.6		18.3	18.2	23.7		19.2	10.2		16.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.3		0.9	0.4	0.4		22.3	0.0		5.0	
Delay (s)	27.7	29.9		19.2	18.6	24.2		41.5	10.2		21.1	
Level of Service	C	C		B	B	C		D	B		C	
Approach Delay (s)		28.9			20.9			39.3			21.1	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.5%	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

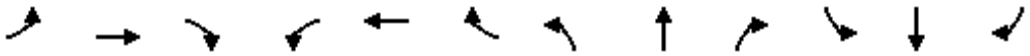


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	12	5	201	63	556	5	850	113	300	426	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			0.98	
Satd. Flow (prot)	1652	1739	1478	1652	1739	1478		3245			3234	
Flt Permitted	0.71	1.00	1.00	0.41	1.00	1.00		0.95			0.53	
Satd. Flow (perm)	1239	1739	1478	710	1739	1478		3088			1738	
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)	11	13	5	218	68	604	5	924	123	326	463	5
RTOR Reduction (vph)	0	0	5	0	0	141	0	11	0	0	1	0
Lane Group Flow (vph)	11	13	0	218	68	463	0	1041	0	0	793	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	8.3	7.2	7.2	31.2	24.1	24.1		41.1			41.1	
Effective Green, g (s)	8.3	7.2	7.2	31.2	24.1	24.1		41.1			41.1	
Actuated g/C Ratio	0.10	0.09	0.09	0.37	0.29	0.29		0.49			0.49	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	127	149	126	464	497	423		1506			847	
v/s Ratio Prot	0.00	0.01		c0.10	0.04							
v/s Ratio Perm	0.01		0.00	0.07		c0.31		0.34			c0.46	
v/c Ratio	0.09	0.09	0.00	0.47	0.14	1.10		0.69			1.95dl	
Uniform Delay, d1	34.5	35.5	35.3	19.5	22.4	30.1		16.7			20.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	0.3	0.3	0.0	0.8	0.1	72.0		1.4			17.4	
Delay (s)	34.8	35.8	35.3	20.3	22.5	102.1		18.1			37.7	
Level of Service	C	D	D	C	C	F		B			D	
Approach Delay (s)		35.3			76.0			18.1			37.7	
Approach LOS		D			E			B			D	

Intersection Summary			
HCM Average Control Delay	42.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

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

c Critical Lane Group

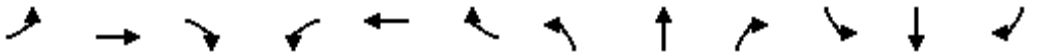


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	55	135	5	50	6	172	1557	14	40	824	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frt		0.92		1.00	0.98			1.00			0.98	
Flt Protected		0.99		0.95	1.00			1.00			1.00	
Satd. Flow (prot)		1583		1652	1709			3283			3233	
Flt Permitted		0.94		0.27	1.00			0.64			0.73	
Satd. Flow (perm)		1504		464	1709			2110			2364	
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)	30	60	147	5	54	7	187	1692	15	43	896	140
RTOR Reduction (vph)	0	42	0	0	4	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	195	0	5	57	0	0	1894	0	0	1071	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.0		15.0	15.0			113.0			113.0	
Effective Green, g (s)		15.0		15.0	15.0			113.0			113.0	
Actuated g/C Ratio		0.11		0.11	0.11			0.81			0.81	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		161		50	183			1703			1908	
v/s Ratio Prot					0.03							
v/s Ratio Perm		c0.13		0.01				c0.90			0.45	
v/c Ratio		1.21		0.10	0.31			1.11			0.56	
Uniform Delay, d1		62.5		56.4	57.7			13.5			4.8	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		139.0		0.9	1.0			59.3			0.4	
Delay (s)		201.5		57.3	58.7			72.8			5.1	
Level of Service		F		E	E			E			A	
Approach Delay (s)		201.5			58.6			72.8			5.1	
Approach LOS		F			E			E			A	

Intersection Summary			
HCM Average Control Delay	59.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	1582	91	0	750	92	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1720	99	0	815	100	0
RTOR Reduction (vph)	0	32	0	0	0	0
Lane Group Flow (vph)	1720	67	0	815	100	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	41.7	41.7		41.7	7.6	
Effective Green, g (s)	41.7	41.7		41.7	7.6	
Actuated g/C Ratio	0.68	0.68		0.68	0.12	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2247	1005		2247	205	
v/s Ratio Prot	c0.52			0.25	c0.06	
v/s Ratio Perm		0.05				
v/c Ratio	0.77	0.07		0.36	0.49	
Uniform Delay, d1	6.5	3.3		4.2	25.0	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.0		0.1	1.8	
Delay (s)	8.1	3.3		4.3	26.9	
Level of Service	A	A		A	C	
Approach Delay (s)	7.9			4.3	26.9	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



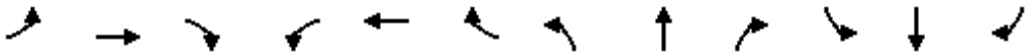
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	135	30	90	214	16	190	135	190	11	87	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.91		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)	1652	1691		1652	1721		1652	1586		1652	1739	
Flt Permitted	0.60	1.00		0.64	1.00		0.50	1.00		0.55	1.00	
Satd. Flow (perm)	1050	1691		1119	1721		873	1586		955	1739	
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)	33	147	33	98	233	17	207	147	207	12	95	0
RTOR Reduction (vph)	0	17	0	0	5	0	0	92	0	0	0	0
Lane Group Flow (vph)	33	163	0	98	245	0	207	262	0	12	95	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)	8.8	8.8		8.8	8.8		20.2	15.6		11.0	10.4	
Effective Green, g (s)	8.8	8.8		8.8	8.8		20.2	15.6		11.0	10.4	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.49	0.38		0.27	0.25	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	225	363		240	369		540	603		266	441	
v/s Ratio Prot		0.10			c0.14		c0.05	c0.16		0.00	0.05	
v/s Ratio Perm	0.03			0.09			0.13			0.01		
v/c Ratio	0.15	0.45		0.41	0.66		0.38	0.43		0.05	0.22	
Uniform Delay, d1	13.1	14.0		13.9	14.7		6.3	9.4		11.1	12.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.9		1.1	4.4		0.5	0.5		0.1	0.2	
Delay (s)	13.4	14.9		15.0	19.2		6.7	9.9		11.1	12.3	
Level of Service	B	B		B	B		A	A		B	B	
Approach Delay (s)		14.6			18.0			8.7			12.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	925	998	612	0	0	990
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3303			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3303			2601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1005	1085	665	0	0	1076
RTOR Reduction (vph)	0	0	0	0	0	13
Lane Group Flow (vph)	1005	1085	665	0	0	1063
Confl. Peds. (#/hr)	2					
Turn Type	Prot					Over
Protected Phases	5	2	6			5
Permitted Phases						
Actuated Green, G (s)	66.4	102.0	23.6			66.4
Effective Green, g (s)	66.4	102.0	23.6			66.4
Actuated g/C Ratio	0.65	1.00	0.23			0.65
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1075	3303	764			1693
v/s Ratio Prot	c0.61	0.33	c0.20			0.41
v/s Ratio Perm						
v/c Ratio	0.93	0.33	0.87			0.63
Uniform Delay, d1	15.9	0.0	37.7			10.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	14.3	0.1	10.6			0.7
Delay (s)	30.2	0.1	48.3			11.2
Level of Service	C	A	D			B
Approach Delay (s)		14.6	48.3		11.2	
Approach LOS		B	D		B	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

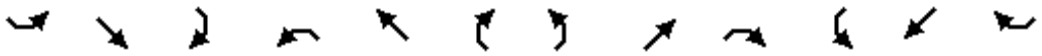


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	174	163	138	384	86	400	1267	101	74	618	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.93		1.00	0.97			0.99			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1652	3064		1652	3213			3240			3194	
Flt Permitted	0.25	1.00		0.24	1.00			0.57			0.53	
Satd. Flow (perm)	435	3064		409	3213			1883			1687	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.00	0.92	0.92	0.92
Adj. Flow (vph)	283	189	177	150	417	93	435	1377	101	80	672	179
RTOR Reduction (vph)	0	115	0	0	12	0	0	3	0	0	14	0
Lane Group Flow (vph)	283	251	0	150	498	0	0	1910	0	0	917	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	27.0	16.0		29.0	17.0			104.0			104.0	
Effective Green, g (s)	27.0	16.0		29.0	17.0			104.0			104.0	
Actuated g/C Ratio	0.18	0.11		0.19	0.11			0.69			0.69	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	168	327		179	364			1306			1170	
v/s Ratio Prot	c0.12	0.08		0.07	0.15							
v/s Ratio Perm	c0.18			0.10				c1.01			0.54	
v/c Ratio	1.68	0.77		0.84	1.37			1.46			0.99dl	
Uniform Delay, d1	58.9	65.2		54.2	66.5			23.0			15.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	332.5	10.3		27.5	181.9			212.5			5.3	
Delay (s)	391.4	75.5		81.7	248.4			235.5			20.7	
Level of Service	F	E		F	F			F			C	
Approach Delay (s)		213.2			210.5			235.5			20.7	
Approach LOS		F			F			F			C	

Intersection Summary			
HCM Average Control Delay	179.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	122.1%	ICU Level of Service	H
Analysis Period (min)	15		

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

c Critical Lane Group



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	6	599	418	253	1312	26	21	206	63	331	115	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		4.0	6.0	
Lane Util. Factor		0.95	1.00		0.95		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00		1.00	0.97		1.00	0.95	
Flt Protected		1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3302	1478		3269		1652	3188		1652	3141	
Flt Permitted		0.93	1.00		0.69		0.63	1.00		0.29	1.00	
Satd. Flow (perm)		3067	1478		2272		1103	3188		497	3141	
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)	7	651	454	275	1426	28	23	224	68	360	125	61
RTOR Reduction (vph)	0	0	114	0	1	0	0	22	0	0	45	0
Lane Group Flow (vph)	0	658	340	0	1728	0	23	270	0	360	141	0
Turn Type	Perm		pm+ov	Perm			pm+pt			pm+pt		
Protected Phases		6	7		2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)		84.0	90.8		84.0		20.4	13.6		33.6	20.8	
Effective Green, g (s)		84.0	90.8		84.0		20.4	13.6		33.6	20.8	
Actuated g/C Ratio		0.65	0.70		0.65		0.16	0.10		0.26	0.16	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1988	1104		1473		202	335		271	504	
v/s Ratio Prot			0.02				0.01	0.08		c0.16	0.04	
v/s Ratio Perm		0.21	0.21		c0.76		0.01			c0.18		
v/c Ratio		0.33	0.31		1.17		0.11	0.80		1.33	0.28	
Uniform Delay, d1		10.2	7.4		22.8		46.7	56.7		44.4	47.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.2		85.5		0.3	13.1		171.0	0.3	
Delay (s)		10.3	7.6		108.3		46.9	69.8		215.5	48.1	
Level of Service		B	A		F		D	E		F	D	
Approach Delay (s)		9.2			108.3			68.1			158.4	
Approach LOS		A			F			E			F	

Intersection Summary			
HCM Average Control Delay	82.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	129.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	106.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	78	372	218	117	6	846	438	175	3	198	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			6.0			6.0	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frt		1.00	0.85		1.00			0.98			1.00	
Flt Protected		0.98	1.00		0.97			0.97			1.00	
Satd. Flow (prot)		1698	1478		1680			3152			3286	
Flt Permitted		0.74	1.00		0.66			0.69			0.94	
Satd. Flow (perm)		1293	1478		1141			2229			3082	
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)	76	85	404	237	127	7	920	476	190	3	215	7
RTOR Reduction (vph)	0	0	293	0	1	0	0	9	0	0	2	0
Lane Group Flow (vph)	0	161	111	0	370	0	0	1577	0	0	223	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		33.0	33.0		33.0			75.0			75.0	
Effective Green, g (s)		33.0	33.0		33.0			75.0			75.0	
Actuated g/C Ratio		0.28	0.28		0.28			0.62			0.62	
Clearance Time (s)		6.0	6.0		6.0			6.0			6.0	
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)		356	406		314			1393			1926	
v/s Ratio Prot												
v/s Ratio Perm		0.12	0.08		c0.32			c0.71			0.07	
v/c Ratio		0.45	0.27		1.18			1.37dl			0.12	
Uniform Delay, d1		36.0	34.1		43.5			22.5			9.1	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		0.9	0.4		108.6			69.0			0.0	
Delay (s)		36.9	34.5		152.1			91.5			9.1	
Level of Service		D	C		F			F			A	
Approach Delay (s)		35.2			152.1			91.5			9.1	
Approach LOS		D			F			F			A	

Intersection Summary			
HCM Average Control Delay	81.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.5%	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	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	63	130	1381	39	38	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1555		3290			3295
Flt Permitted	0.98		1.00			0.80
Satd. Flow (perm)	1555		3290			2630
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	141	1501	42	41	815
RTOR Reduction (vph)	24	0	3	0	0	0
Lane Group Flow (vph)	185	0	1540	0	0	856
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	12.0		34.3			34.3
Effective Green, g (s)	12.0		34.3			34.3
Actuated g/C Ratio	0.21		0.59			0.59
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	320		1936			1547
v/s Ratio Prot	c0.12		c0.47			
v/s Ratio Perm						0.33
v/c Ratio	0.58		0.80			0.55
Uniform Delay, d1	20.9		9.3			7.3
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	2.5		2.3			0.4
Delay (s)	23.4		11.6			7.8
Level of Service	C		B			A
Approach Delay (s)	23.4		11.6			7.8
Approach LOS	C		B			A

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

2025

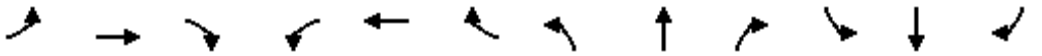
3-Lane Scenario

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	18	18	203	122	209	49	1282	99	82	535	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1620		1752	1881	1568	1805	1863	1524	1597	1852	
Flt Permitted	0.61	1.00		0.57	1.00	1.00	0.35	1.00	1.00	0.04	1.00	
Satd. Flow (perm)	1166	1620		1052	1881	1568	665	1863	1524	69	1852	
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)	35	20	20	221	133	227	53	1393	108	89	582	28
RTOR Reduction (vph)	0	18	0	0	0	148	0	0	16	0	1	0
Lane Group Flow (vph)	35	22	0	221	133	79	53	1393	92	89	609	0
Heavy Vehicles (%)	0%	17%	0%	3%	1%	3%	0%	2%	6%	13%	2%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	18.4	12.4		25.4	15.9	15.9	101.2	96.5	96.5	103.8	97.8	
Effective Green, g (s)	18.4	12.4		25.4	15.9	15.9	101.2	96.5	96.5	103.8	97.8	
Actuated g/C Ratio	0.12	0.08		0.17	0.11	0.11	0.68	0.65	0.65	0.70	0.66	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	170	135		225	202	168	490	1211	991	110	1221	
v/s Ratio Prot	0.01	0.01		c0.06	0.07		0.00	c0.75		c0.03	0.33	
v/s Ratio Perm	0.02			c0.11		0.05	0.07		0.06	0.53		
v/c Ratio	0.21	0.16		0.98	0.66	0.47	0.11	1.15	0.09	0.81	0.50	
Uniform Delay, d1	58.1	63.2		60.6	63.6	62.3	9.0	26.0	9.7	45.5	12.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.6		54.6	7.5	2.1	0.1	77.6	0.0	33.8	0.3	
Delay (s)	58.7	63.7		115.2	71.2	64.3	9.1	103.5	9.7	79.3	13.2	
Level of Service	E	E		F	E	E	A	F	A	E	B	
Approach Delay (s)		61.4			85.3			93.8			21.6	
Approach LOS		E			F			F			C	

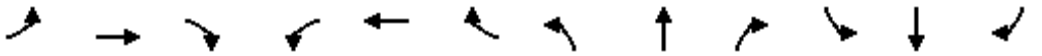
Intersection Summary			
HCM Average Control Delay	73.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	148.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



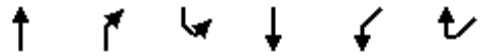
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	12	5	201	63	556	5	850	113	300	426	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1830		1770	1860	
Flt Permitted	0.71	1.00	1.00	0.41	1.00	1.00	0.49	1.00		0.05	1.00	
Satd. Flow (perm)	1328	1863	1583	756	1863	1583	921	1830		85	1860	
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)	11	13	5	218	68	604	5	924	123	326	463	5
RTOR Reduction (vph)	0	0	5	0	0	119	0	3	0	0	0	0
Lane Group Flow (vph)	11	13	0	218	68	485	5	1044	0	326	468	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	9.4	7.1	7.1	23.1	14.8	39.9	83.2	82.1		113.2	106.1	
Effective Green, g (s)	9.4	7.1	7.1	23.1	14.8	39.9	83.2	82.1		113.2	106.1	
Actuated g/C Ratio	0.06	0.05	0.05	0.16	0.10	0.27	0.56	0.55		0.76	0.72	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	91	89	76	186	186	490	523	1013		350	1331	
v/s Ratio Prot	0.00	0.01		c0.08	0.04	c0.17	0.00	c0.57		0.16	0.25	
v/s Ratio Perm	0.01		0.00	0.10		0.14	0.01			0.56		
v/c Ratio	0.12	0.15	0.00	1.17	0.37	0.99	0.01	1.03		0.93	0.35	
Uniform Delay, d1	65.5	67.7	67.2	61.3	62.4	54.0	14.3	33.1		53.1	8.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.8	0.0	120.0	1.2	37.5	0.0	36.4		31.0	0.2	
Delay (s)	66.1	68.5	67.2	181.2	63.6	91.5	14.3	69.5		84.1	8.2	
Level of Service	E	E	E	F	E	F	B	E		F	A	
Approach Delay (s)		67.3			111.3			69.2			39.3	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM Average Control Delay	74.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	148.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



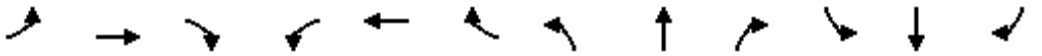
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	55	135	5	50	6	172	1557	14	40	824	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.92		1.00	0.98		1.00	1.00		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696		1770	1831		1770	1860		1770	1825	
Flt Permitted		0.94		0.27	1.00		0.14	1.00		0.04	1.00	
Satd. Flow (perm)		1611		497	1831		261	1860		70	1825	
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)	30	60	147	5	54	7	187	1692	15	43	896	140
RTOR Reduction (vph)	0	40	0	0	3	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	197	0	5	58	0	187	1707	0	43	1032	0
Turn Type	Perm			Perm			pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.0		15.0	15.0		123.0	123.0		106.8	106.8	
Effective Green, g (s)		15.0		15.0	15.0		123.0	123.0		106.8	106.8	
Actuated g/C Ratio		0.10		0.10	0.10		0.82	0.82		0.71	0.71	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		161		50	183		317	1525		50	1299	
v/s Ratio Prot					0.03		0.04	c0.92			0.57	
v/s Ratio Perm		c0.12		0.01			0.44			0.62		
v/c Ratio		1.23		0.10	0.32		0.59	1.12		0.86	0.79	
Uniform Delay, d1		67.5		61.4	62.7		20.2	13.5		16.0	14.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		144.4		0.9	1.0		2.8	63.1		77.1	3.4	
Delay (s)		211.9		62.2	63.8		23.0	76.6		93.2	17.8	
Level of Service		F		E	E		C	E		F	B	
Approach Delay (s)		211.9			63.6			71.3			20.8	
Approach LOS		F			E			E			C	

Intersection Summary			
HCM Average Control Delay	64.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	125.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	1582	91	0	750	92	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	1863	1583		1863	1770	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	1863	1583		1863	1770	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1720	99	0	815	100	0
RTOR Reduction (vph)	0	15	0	0	0	0
Lane Group Flow (vph)	1720	84	0	815	100	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	124.0	124.0		124.0	12.6	
Effective Green, g (s)	124.0	124.0		124.0	12.6	
Actuated g/C Ratio	0.83	0.83		0.83	0.08	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1555	1321		1555	150	
v/s Ratio Prot	c0.92			0.44	c0.06	
v/s Ratio Perm		0.05				
v/c Ratio	1.11	0.06		0.52	0.67	
Uniform Delay, d1	12.3	2.2		3.6	66.0	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	57.7	0.0		0.3	10.7	
Delay (s)	70.0	2.2		3.9	76.6	
Level of Service	E	A		A	E	
Approach Delay (s)	66.3			3.9	76.6	
Approach LOS	E			A	E	

Intersection Summary			
HCM Average Control Delay	48.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	148.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



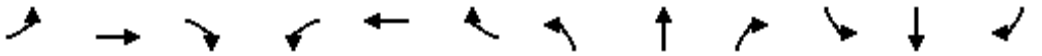
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	135	30	90	214	16	190	135	190	11	87	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.91		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)	1770	1812		1770	1844		1770	1699		1770	1863	
Flt Permitted	0.60	1.00		0.47	1.00		0.51	1.00		0.54	1.00	
Satd. Flow (perm)	1125	1812		884	1844		950	1699		1005	1863	
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)	3	147	33	98	233	17	207	147	207	12	95	0
RTOR Reduction (vph)	0	10	0	0	3	0	0	61	0	0	0	0
Lane Group Flow (vph)	3	170	0	98	247	0	207	293	0	12	95	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.3	15.7		28.5	21.3		28.2	21.0		17.0	15.4	
Effective Green, g (s)	17.3	15.7		28.5	21.3		28.2	21.0		17.0	15.4	
Actuated g/C Ratio	0.25	0.23		0.41	0.31		0.41	0.30		0.24	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	295	409		454	565		470	513		263	413	
v/s Ratio Prot	0.00	0.09		c0.02	c0.13		c0.05	c0.17		0.00	0.05	
v/s Ratio Perm	0.00			0.07			0.13			0.01		
v/c Ratio	0.01	0.42		0.22	0.44		0.44	0.57		0.05	0.23	
Uniform Delay, d1	19.6	23.0		13.0	19.3		14.2	20.5		20.0	22.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.7		0.2	0.5		0.7	1.5		0.1	0.3	
Delay (s)	19.7	23.7		13.3	19.8		14.8	22.0		20.0	22.5	
Level of Service	B	C		B	B		B	C		C	C	
Approach Delay (s)		23.6			18.0			19.4			22.2	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	925	998	612	0	0	990
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	1.00	1.00			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	1863	1863			2787
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	1863	1863			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1005	1085	665	0	0	1076
RTOR Reduction (vph)	0	0	0	0	0	69
Lane Group Flow (vph)	1005	1085	665	0	0	1007
Confl. Peds. (#/hr)	2					
Turn Type	Prot					Over
Protected Phases	5	2	6			5
Permitted Phases						
Actuated Green, G (s)	66.0	120.0	42.0			66.0
Effective Green, g (s)	66.0	120.0	42.0			66.0
Actuated g/C Ratio	0.55	1.00	0.35			0.55
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	974	1863	652			1533
v/s Ratio Prot	c0.57	0.58	c0.36			0.36
v/s Ratio Perm						
v/c Ratio	1.03	0.58	1.02			0.66
Uniform Delay, d1	27.0	0.0	39.0			19.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	37.3	0.5	40.4			1.0
Delay (s)	64.3	0.5	79.4			20.0
Level of Service	E	A	E			C
Approach Delay (s)		31.2	79.4		20.0	
Approach LOS		C	E		C	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

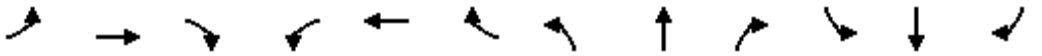


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	174	163	138	384	86	400	1267	101	74	618	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.97		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3282		1770	3442		1770	1844		1770	1804	
Flt Permitted	0.18	1.00		0.40	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	339	3282		740	3442		105	1844		115	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.00	0.92	0.92	0.92
Adj. Flow (vph)	283	189	177	150	417	93	435	1377	101	80	672	179
RTOR Reduction (vph)	0	115	0	0	12	0	0	2	0	0	6	0
Lane Group Flow (vph)	283	251	0	150	498	0	435	1476	0	80	845	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	37.0	22.0		27.0	17.0		100.0	84.0		75.0	65.0	
Effective Green, g (s)	37.0	22.0		27.0	17.0		100.0	84.0		75.0	65.0	
Actuated g/C Ratio	0.25	0.15		0.18	0.11		0.67	0.56		0.50	0.43	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	227	481		202	390		392	1033		168	782	
v/s Ratio Prot	c0.12	0.08		0.05	0.14		c0.21	c0.80		0.03	0.47	
v/s Ratio Perm	c0.18			0.08			0.53			0.21		
v/c Ratio	1.25	0.52		0.74	1.28		1.11	1.43		0.48	1.08	
Uniform Delay, d1	51.6	59.1		55.8	66.5		52.1	33.0		32.6	42.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	142.3	1.0		13.7	142.7		78.6	198.7		2.1	56.1	
Delay (s)	193.8	60.2		69.5	209.2		130.6	231.7		34.7	98.6	
Level of Service	F	E		E	F		F	F		C	F	
Approach Delay (s)		118.5			177.4			208.7			93.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	163.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	128.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	6	599	418	253	1312	26	21	206	63	331	115	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1857		1770	3416		1770	3365	
Flt Permitted	0.05	1.00	1.00	0.20	1.00		0.63	1.00		0.21	1.00	
Satd. Flow (perm)	99	1863	1583	377	1857		1182	3416		387	3365	
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)	7	651	454	275	1426	28	23	224	68	360	125	61
RTOR Reduction (vph)	0	0	97	0	0	0	0	19	0	0	37	0
Lane Group Flow (vph)	7	651	357	275	1454	0	23	273	0	360	149	0
Turn Type	Perm		pm+ov	pm+pt			pm+pt			pm+pt		
Protected Phases		6	7	5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	75.6	75.6	82.7	97.0	97.0		21.0	13.9		40.9	27.8	
Effective Green, g (s)	75.6	75.6	82.7	97.0	97.0		21.0	13.9		40.9	27.8	
Actuated g/C Ratio	0.50	0.50	0.55	0.65	0.65		0.14	0.09		0.27	0.19	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	50	940	937	387	1202		193	317		299	624	
v/s Ratio Prot		0.35	0.02	0.07	c0.78		0.01	0.08		c0.17	0.04	
v/s Ratio Perm	0.07		0.21	0.39			0.01			c0.16		
v/c Ratio	0.14	0.69	0.38	0.71	1.21		0.12	0.86		1.20	0.24	
Uniform Delay, d1	19.8	28.3	19.1	20.2	26.4		56.2	67.0		49.1	52.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	2.2	0.3	6.0	102.2		0.3	20.5		119.2	0.2	
Delay (s)	21.1	30.5	19.3	26.2	128.6		56.4	87.6		168.3	52.2	
Level of Service	C	C	B	C	F		E	F		F	D	
Approach Delay (s)		25.9			112.4			85.3			128.8	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM Average Control Delay	86.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	149.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	125.6%	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												
Volume (vph)	70	78	372	218	117	6	846	438	175	3	198	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.96		1.00	1.00	
Flt Protected		0.98	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1820	1583		1800		1770	1783		1770	1854	
Flt Permitted		0.75	1.00		0.67		0.24	1.00		0.41	1.00	
Satd. Flow (perm)		1389	1583		1238		441	1783		767	1854	
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)	76	85	404	237	127	7	920	476	190	3	215	7
RTOR Reduction (vph)	0	0	297	0	1	0	0	13	0	0	1	0
Lane Group Flow (vph)	0	161	107	0	370	0	920	653	0	3	221	0
Turn Type	Perm		Perm	Perm			pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.0	29.0		29.0		68.4	68.4		15.4	15.4	
Effective Green, g (s)		29.0	29.0		29.0		68.4	68.4		15.4	15.4	
Actuated g/C Ratio		0.27	0.27		0.27		0.63	0.63		0.14	0.14	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		368	420		328		847	1115		108	261	
v/s Ratio Prot							c0.47	0.37			0.12	
v/s Ratio Perm		0.12	0.07		c0.30		c0.21			0.00		
v/c Ratio		0.44	0.25		1.13		1.09	0.59		0.03	0.85	
Uniform Delay, d1		33.4	31.7		40.2		24.2	12.1		40.5	45.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.3		89.2		57.0	0.8		0.1	21.6	
Delay (s)		34.3	32.0		129.4		81.2	12.9		40.6	67.5	
Level of Service		C	C		F		F	B		D	E	
Approach Delay (s)		32.6			129.4			52.5			67.1	
Approach LOS		C			F			D			E	

Intersection Summary			
HCM Average Control Delay	60.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	109.4	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			

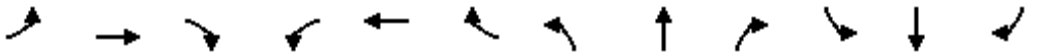
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	63	130	1381	39	38	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.91		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1666		1856		1770	1863
Flt Permitted	0.98		1.00		0.04	1.00
Satd. Flow (perm)	1666		1856		65	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	141	1501	42	41	815
RTOR Reduction (vph)	53	0	1	0	0	0
Lane Group Flow (vph)	156	0	1542	0	41	815
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	14.0		114.0		114.0	114.0
Effective Green, g (s)	14.0		114.0		114.0	114.0
Actuated g/C Ratio	0.10		0.81		0.81	0.81
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	167		1511		53	1517
v/s Ratio Prot	c0.09		c0.83			0.44
v/s Ratio Perm					0.63	
v/c Ratio	0.93		1.02		0.77	0.54
Uniform Delay, d1	62.5		13.0		6.5	4.3
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	50.2		28.5		49.7	0.4
Delay (s)	112.7		41.5		56.3	4.7
Level of Service	F		D		E	A
Approach Delay (s)	112.7		41.5			7.1
Approach LOS	F		D			A

Intersection Summary			
HCM Average Control Delay	35.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

2035

5-Lane Scenario

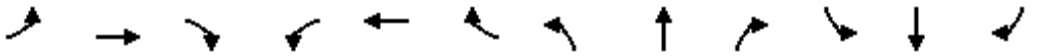
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	15	15	166	100	171	40	1051	81	67	439	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1685	1512		1554	1638	1463	1685	3303	1422	1491	3283	
Flt Permitted	0.66	1.00		0.44	0.89	1.00	0.47	1.00	1.00	0.11	1.00	
Satd. Flow (perm)	1168	1512		719	1473	1463	831	3303	1422	175	3283	
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)	28	16	16	180	109	186	43	1142	88	73	477	23
RTOR Reduction (vph)	0	14	0	0	0	149	0	0	44	0	4	0
Lane Group Flow (vph)	28	18	0	142	147	37	43	1142	44	73	496	0
Heavy Vehicles (%)	0%	17%	0%	3%	1%	3%	0%	2%	6%	13%	2%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	11.5	8.9		24.0	24.0	15.4	32.3	30.1	30.1	41.9	35.9	
Effective Green, g (s)	11.5	8.9		24.0	24.0	15.4	32.3	30.1	30.1	41.9	35.9	
Actuated g/C Ratio	0.15	0.11		0.31	0.31	0.20	0.41	0.39	0.39	0.54	0.46	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	189	172		318	472	288	368	1273	548	195	1509	
v/s Ratio Prot	0.00	0.01		c0.05	0.04		0.00	c0.35		c0.03	c0.15	
v/s Ratio Perm	0.02			c0.09	0.06	0.03	0.05		0.03	0.17		
v/c Ratio	0.15	0.10		0.45	0.31	0.13	0.12	0.90	0.08	0.37	0.33	
Uniform Delay, d1	28.9	31.0		20.9	20.7	25.8	13.8	22.5	15.2	13.1	13.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.3		1.0	0.4	0.2	0.1	8.6	0.1	1.2	0.1	
Delay (s)	29.2	31.3		21.9	21.1	26.0	13.9	31.1	15.3	14.3	13.6	
Level of Service	C	C		C	C	C	B	C	B	B	B	
Approach Delay (s)		30.3			23.3			29.4			13.7	
Approach LOS		C			C			C			B	

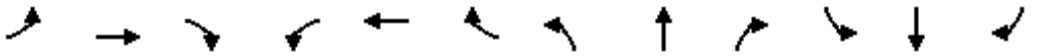
Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



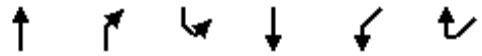
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	10	4	165	52	456	4	697	93	246	349	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	1739	1478	1652	1739	1478	1652	3245		1652	3298	
Flt Permitted	1.00	1.00	1.00	0.43	1.00	1.00	0.52	1.00		0.14	1.00	
Satd. Flow (perm)	1739	1739	1478	748	1739	1478	913	3245		236	3298	
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)	9	11	4	179	57	496	4	758	101	267	379	4
RTOR Reduction (vph)	0	0	4	0	0	3	0	10	0	0	1	0
Lane Group Flow (vph)	9	11	0	179	57	493	4	849	0	267	382	0
Turn Type	Perm		Perm	pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	3.3	3.3	3.3	19.6	19.6	34.2	25.4	23.8		44.4	36.8	
Effective Green, g (s)	3.3	3.3	3.3	19.6	19.6	34.2	25.4	23.8		44.4	36.8	
Actuated g/C Ratio	0.04	0.04	0.04	0.26	0.26	0.45	0.33	0.31		0.58	0.48	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	76	76	64	315	448	782	321	1016		410	1597	
v/s Ratio Prot		0.01		0.08	0.03	c0.12	0.00	c0.26		c0.13	0.12	
v/s Ratio Perm	0.01		0.00	0.07		0.21	0.00			0.26		
v/c Ratio	0.12	0.14	0.00	0.57	0.13	0.63	0.01	0.84		0.65	0.24	
Uniform Delay, d1	35.0	35.0	34.8	23.7	21.6	16.0	16.9	24.3		13.3	11.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.9	0.0	2.3	0.1	1.7	0.0	6.1		3.7	0.1	
Delay (s)	35.7	35.9	34.8	26.0	21.8	17.7	16.9	30.4		16.9	11.5	
Level of Service	D	D	C	C	C	B	B	C		B	B	
Approach Delay (s)		35.6			20.1			30.3			13.7	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



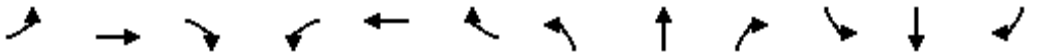
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	45	110	4	41	5	141	1277	11	33	676	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt		0.92		1.00	0.98		1.00	1.00		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1583		1652	1712		1652	3299		1652	3236	
Flt Permitted		0.95		0.62	1.00		0.23	1.00		0.16	1.00	
Satd. Flow (perm)		1511		1083	1712		407	3299		270	3236	
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)	25	49	120	4	45	5	153	1388	12	36	735	115
RTOR Reduction (vph)	0	98	0	0	4	0	0	1	0	0	19	0
Lane Group Flow (vph)	0	96	0	4	46	0	153	1399	0	36	831	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)		10.9		10.9	10.9		35.6	30.1		27.3	25.8	
Effective Green, g (s)		10.9		10.9	10.9		35.6	30.1		27.3	25.8	
Actuated g/C Ratio		0.19		0.19	0.19		0.61	0.51		0.47	0.44	
Clearance Time (s)		6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		282		202	319		371	1697		161	1427	
v/s Ratio Prot					0.03		c0.04	c0.42		0.01	0.26	
v/s Ratio Perm		c0.06		0.00			0.21			0.10		
v/c Ratio		0.34		0.02	0.14		0.41	0.82		0.22	0.58	
Uniform Delay, d1		20.7		19.4	19.9		5.8	12.0		9.3	12.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7		0.0	0.2		0.7	3.4		0.7	0.6	
Delay (s)		21.4		19.5	20.1		6.6	15.4		10.0	12.9	
Level of Service		C		B	C		A	B		B	B	
Approach Delay (s)		21.4			20.1			14.5			12.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	1297	75	0	615	76	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1410	82	0	668	83	0
RTOR Reduction (vph)	0	40	0	0	0	0
Lane Group Flow (vph)	1410	42	0	668	83	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	23.3	23.3		23.3	10.0	
Effective Green, g (s)	23.3	23.3		23.3	10.0	
Actuated g/C Ratio	0.51	0.51		0.51	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1699	760		1699	365	
v/s Ratio Prot	c0.43			0.20	c0.05	
v/s Ratio Perm		0.03				
v/c Ratio	0.83	0.06		0.39	0.23	
Uniform Delay, d1	9.3	5.5		6.7	14.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	0.0		0.2	0.3	
Delay (s)	12.8	5.5		6.8	14.8	
Level of Service	B	A		A	B	
Approach Delay (s)	12.4			6.8	14.8	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



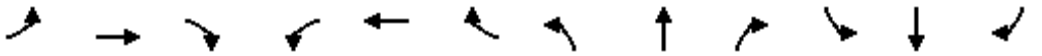
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	127	28	85	202	15	179	127	179	10	82	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.92		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)	1652	1675		1652	1696		1652	1595		1652	1739	
Flt Permitted	0.58	1.00		0.63	1.00		0.67	1.00		0.54	1.00	
Satd. Flow (perm)	1015	1675		1089	1696		1164	1595		943	1739	
Peak-hour factor, PHF	0.25	0.80	0.55	0.59	0.84	0.32	0.71	0.77	0.88	0.58	0.60	1.00
Adj. Flow (vph)	12	159	51	144	240	47	252	165	203	17	137	0
RTOR Reduction (vph)	0	31	0	0	19	0	0	119	0	0	0	0
Lane Group Flow (vph)	12	179	0	144	268	0	252	249	0	17	137	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.3	8.3		8.3	8.3		8.8	8.8		8.8	8.8	
Effective Green, g (s)	8.3	8.3		8.3	8.3		8.8	8.8		8.8	8.8	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.30	0.30		0.30	0.30	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	290	478		311	484		352	482		285	526	
v/s Ratio Prot		0.11			c0.16			0.16			0.08	
v/s Ratio Perm	0.01			0.13			c0.22			0.02		
v/c Ratio	0.04	0.37		0.46	0.55		0.72	0.52		0.06	0.26	
Uniform Delay, d1	7.5	8.3		8.6	8.8		9.0	8.4		7.2	7.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.5		1.1	1.4		6.8	0.9		0.1	0.3	
Delay (s)	7.6	8.8		9.7	10.2		15.8	9.3		7.3	8.0	
Level of Service	A	A		A	B		B	A		A	A	
Approach Delay (s)		8.7			10.0			12.0			7.9	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	29.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	759	818	502	0	0	812
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3303			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3303			2601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	825	889	546	0	0	883
RTOR Reduction (vph)	0	0	0	0	0	47
Lane Group Flow (vph)	825	889	546	0	0	836
Confl. Peds. (#/hr)	2					
Turn Type	Prot					Over
Protected Phases	5	2	6			5
Permitted Phases						
Actuated Green, G (s)	31.4	58.1	14.7			31.4
Effective Green, g (s)	31.4	58.1	14.7			31.4
Actuated g/C Ratio	0.54	1.00	0.25			0.54
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	893	3303	836			1406
v/s Ratio Prot	c0.50	0.27	c0.17			0.32
v/s Ratio Perm						
v/c Ratio	0.92	0.27	0.65			0.59
Uniform Delay, d1	12.3	0.0	19.4			9.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	14.9	0.0	1.8			0.7
Delay (s)	27.1	0.0	21.3			9.7
Level of Service	C	A	C			A
Approach Delay (s)		13.1	21.3		9.7	
Approach LOS		B	C		A	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

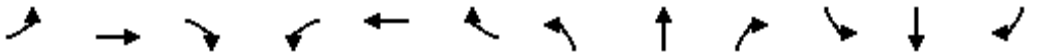


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	213	143	134	113	315	71	328	1039	83	61	507	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.97		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3063		1652	3212		1652	3269		1652	3199	
Flt Permitted	0.43	1.00		0.57	1.00		0.20	1.00		0.23	1.00	
Satd. Flow (perm)	745	3063		988	3212		342	3269		407	3199	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.00	0.92	0.92	0.92
Adj. Flow (vph)	232	155	146	123	342	77	357	1129	83	66	551	147
RTOR Reduction (vph)	0	114	0	0	30	0	0	8	0	0	36	0
Lane Group Flow (vph)	232	187	0	123	389	0	357	1204	0	66	662	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.1	14.1		16.3	13.2		32.1	25.8		19.4	17.1	
Effective Green, g (s)	18.1	14.1		16.3	13.2		32.1	25.8		19.4	17.1	
Actuated g/C Ratio	0.28	0.22		0.25	0.20		0.49	0.40		0.30	0.26	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	262	661		278	649		389	1292		165	838	
v/s Ratio Prot	c0.05	0.06		0.02	0.12		c0.15	c0.37		0.01	0.21	
v/s Ratio Perm	c0.19			0.09			0.30			0.10		
v/c Ratio	0.89	0.28		0.44	0.60		0.92	0.93		0.40	0.79	
Uniform Delay, d1	21.7	21.4		19.9	23.6		13.1	18.9		17.2	22.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	27.9	0.2		1.1	1.5		26.0	12.1		1.6	5.0	
Delay (s)	49.6	21.6		21.0	25.1		39.1	31.0		18.8	27.4	
Level of Service	D	C		C	C		D	C		B	C	
Approach Delay (s)		33.8			24.2			32.9			26.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	491	343	207	1076	21	17	169	52	271	94	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	3303	1478	1652	3294		1652	3186		1652	3140	
Flt Permitted	0.21	1.00	1.00	0.33	1.00		0.66	1.00		0.49	1.00	
Satd. Flow (perm)	362	3303	1478	565	3294		1140	3186		848	3140	
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)	5	534	373	225	1170	23	18	184	57	295	102	50
RTOR Reduction (vph)	0	0	264	0	2	0	0	45	0	0	37	0
Lane Group Flow (vph)	5	534	109	225	1191	0	18	196	0	295	115	0
Turn Type	pm+pt		Perm	pm+pt			pm+pt			pm+pt		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	20.0	19.2	19.2	31.8	27.0		14.5	13.7		20.9	16.9	
Effective Green, g (s)	20.0	19.2	19.2	31.8	27.0		14.5	13.7		20.9	16.9	
Actuated g/C Ratio	0.31	0.29	0.29	0.49	0.41		0.22	0.21		0.32	0.26	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	126	968	433	417	1358		259	666		320	810	
v/s Ratio Prot	0.00	0.16		c0.07	c0.36		0.00	0.06		c0.06	0.04	
v/s Ratio Perm	0.01		0.07	0.19			0.01			c0.24		
v/c Ratio	0.04	0.55	0.25	0.54	0.88		0.07	0.29		0.92	0.14	
Uniform Delay, d1	16.2	19.5	17.7	10.5	17.7		20.1	21.8		21.3	18.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.7	0.3	1.3	6.7		0.1	0.2		30.8	0.1	
Delay (s)	16.3	20.2	18.0	11.8	24.4		20.2	22.1		52.1	18.8	
Level of Service	B	C	B	B	C		C	C		D	B	
Approach Delay (s)		19.3			22.4			21.9			40.8	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	74	350	205	110	6	795	412	165	3	186	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0		6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00		1.00	0.96		1.00	0.99	
Flt Protected		0.98	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1698	1478		1680		1652	3162		1652	3275	
Flt Permitted		0.75	1.00		0.72		0.48	1.00		0.41	1.00	
Satd. Flow (perm)		1298	1478		1243		843	3162		720	3275	
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	0.50
Adj. Flow (vph)	72	80	380	223	120	7	864	448	179	3	202	12
RTOR Reduction (vph)	0	0	77	0	1	0	0	44	0	0	5	0
Lane Group Flow (vph)	0	152	304	0	349	0	864	583	0	3	209	0
Turn Type	Perm		pm+ov	Perm			pm+pt			pm+pt		
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		24.0	59.0		24.0		53.6	48.8		15.4	14.6	
Effective Green, g (s)		24.0	59.0		24.0		53.6	48.8		15.4	14.6	
Actuated g/C Ratio		0.27	0.66		0.27		0.60	0.54		0.17	0.16	
Clearance Time (s)		6.0	4.0		6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		348	973		333		820	1722		132	534	
v/s Ratio Prot			0.12				c0.41	0.18		0.00	0.06	
v/s Ratio Perm		0.12	0.08		c0.28		c0.22			0.00		
v/c Ratio		0.44	0.31		1.05		1.05	0.34		0.02	0.39	
Uniform Delay, d1		27.2	6.6		32.8		14.8	11.4		30.9	33.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.2		62.7		46.5	0.1		0.1	0.5	
Delay (s)		28.1	6.8		95.5		61.4	11.5		30.9	34.0	
Level of Service		C	A		F		E	B		C	C	
Approach Delay (s)		12.9			95.5			40.4			34.0	
Approach LOS		B			F			D			C	

Intersection Summary			
HCM Average Control Delay	41.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

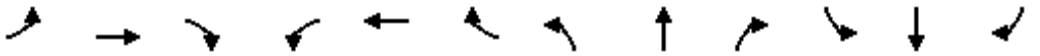
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	59	122	1298	37	35	705
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.91		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1555		3290		1652	3303
Flt Permitted	0.98		1.00		0.12	1.00
Satd. Flow (perm)	1555		3290		209	3303
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	133	1411	40	38	766
RTOR Reduction (vph)	30	0	3	0	0	0
Lane Group Flow (vph)	167	0	1448	0	38	766
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	11.7		33.2		33.2	33.2
Effective Green, g (s)	11.7		33.2		33.2	33.2
Actuated g/C Ratio	0.21		0.58		0.58	0.58
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	320		1920		122	1927
v/s Ratio Prot	c0.11		c0.44			0.23
v/s Ratio Perm					0.18	
v/c Ratio	0.52		0.75		0.31	0.40
Uniform Delay, d1	20.1		8.8		6.0	6.4
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.5		1.7		1.5	0.1
Delay (s)	21.6		10.5		7.5	6.6
Level of Service	C		B		A	A
Approach Delay (s)	21.6		10.5			6.6
Approach LOS	C		B			A

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

2035

4-Lane Scenario

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	15	15	166	100	171	40	1051	81	67	439	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.95	1.00		0.95	
Frt	1.00	0.93		1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected	0.95	1.00		0.95	0.99	1.00		1.00	1.00		0.99	
Satd. Flow (prot)	1685	1512		1554	1638	1463		3300	1422		3221	
Flt Permitted	0.66	1.00		0.43	0.94	1.00		0.91	1.00		0.62	
Satd. Flow (perm)	1168	1512		699	1567	1463		3013	1422		2005	
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)	28	16	16	180	109	186	43	1142	88	73	477	23
RTOR Reduction (vph)	0	14	0	0	0	141	0	0	50	0	4	0
Lane Group Flow (vph)	28	18	0	142	147	45	0	1185	38	0	569	0
Heavy Vehicles (%)	0%	17%	0%	3%	1%	3%	0%	2%	6%	13%	2%	0%
Turn Type	pm+pt			pm+pt		Perm	Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	10.8	8.3		23.7	23.7	15.2		27.3	27.3		27.3	
Effective Green, g (s)	10.8	8.3		23.7	23.7	15.2		27.3	27.3		27.3	
Actuated g/C Ratio	0.17	0.13		0.38	0.38	0.24		0.43	0.43		0.43	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	221	199		391	600	353		1306	616		869	
v/s Ratio Prot	0.01	0.01		c0.05	0.04							
v/s Ratio Perm	0.02			c0.08	0.06	0.03		c0.39	0.03		0.28	
v/c Ratio	0.13	0.09		0.36	0.24	0.13		0.91	0.06		0.65	
Uniform Delay, d1	22.0	24.0		13.8	13.5	18.7		16.7	10.4		14.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.2		0.6	0.2	0.2		9.3	0.0		1.8	
Delay (s)	22.3	24.2		14.4	13.7	18.9		25.9	10.4		15.9	
Level of Service	C	C		B	B	B		C	B		B	
Approach Delay (s)		23.3			15.9			24.9			15.9	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

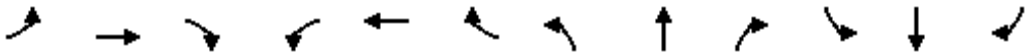
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	10	4	165	52	456	4	697	93	246	349	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			0.98	
Satd. Flow (prot)	1652	1739	1478	1652	1739	1478		3245			3234	
Flt Permitted	0.77	1.00	1.00	0.36	1.00	1.00		0.95			0.56	
Satd. Flow (perm)	1337	1739	1478	621	1739	1478		3089			1845	
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)	9	11	4	179	57	496	4	758	101	267	379	4
RTOR Reduction (vph)	0	0	4	0	0	201	0	15	0	0	1	0
Lane Group Flow (vph)	9	11	0	179	57	295	0	848	0	0	649	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	6.2	5.2	5.2	21.1	14.1	14.1		23.2			23.2	
Effective Green, g (s)	6.2	5.2	5.2	21.1	14.1	14.1		23.2			23.2	
Actuated g/C Ratio	0.11	0.09	0.09	0.37	0.25	0.25		0.41			0.41	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	153	161	137	414	436	370		1273			760	
v/s Ratio Prot	0.00	0.01		c0.08	0.03							
v/s Ratio Perm	0.01		0.00	0.09		c0.20		0.27			c0.35	
v/c Ratio	0.06	0.07	0.00	0.43	0.13	0.80		0.67			1.33dl	
Uniform Delay, d1	22.4	23.3	23.2	12.7	16.4	19.8		13.4			15.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	0.2	0.2	0.0	0.7	0.1	11.4		1.3			9.3	
Delay (s)	22.6	23.5	23.2	13.4	16.5	31.1		14.7			24.3	
Level of Service	C	C	C	B	B	C		B			C	
Approach Delay (s)		23.1			25.7			14.7			24.3	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

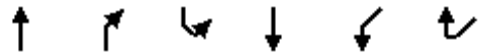
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



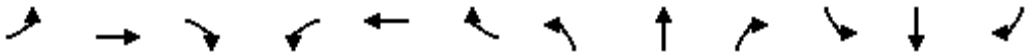
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	45	110	4	41	5	141	1277	11	33	676	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frt		0.92		1.00	0.98			1.00			0.98	
Flt Protected		0.99		0.95	1.00			1.00			1.00	
Satd. Flow (prot)		1583		1652	1712			3283			3232	
Flt Permitted		0.95		0.47	1.00			0.71			0.83	
Satd. Flow (perm)		1510		812	1712			2344			2676	
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)	25	49	120	4	45	5	153	1388	12	36	735	115
RTOR Reduction (vph)	0	75	0	0	4	0	0	1	0	0	13	0
Lane Group Flow (vph)	0	119	0	4	46	0	0	1552	0	0	873	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.8		11.8	11.8			56.9			56.9	
Effective Green, g (s)		11.8		11.8	11.8			56.9			56.9	
Actuated g/C Ratio		0.15		0.15	0.15			0.71			0.71	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		221		119	250			1653			1887	
v/s Ratio Prot					0.03							
v/s Ratio Perm		c0.08		0.00				c0.66			0.33	
v/c Ratio		0.54		0.03	0.18			0.94			0.46	
Uniform Delay, d1		31.9		29.6	30.2			10.4			5.2	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		2.5		0.1	0.4			10.7			0.2	
Delay (s)		34.4		29.7	30.6			21.1			5.4	
Level of Service		C		C	C			C			A	
Approach Delay (s)		34.4			30.5			21.1			5.4	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	1297	75	0	615	76	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.95	1.00		0.95	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	3303	1478		3303	1652	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	3303	1478		3303	1652	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1410	82	0	668	83	0
RTOR Reduction (vph)	0	28	0	0	0	0
Lane Group Flow (vph)	1410	54	0	668	83	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	33.2	33.2		33.2	5.4	
Effective Green, g (s)	33.2	33.2		33.2	5.4	
Actuated g/C Ratio	0.66	0.66		0.66	0.11	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2167	970		2167	176	
v/s Ratio Prot	c0.43			0.20	c0.05	
v/s Ratio Perm		0.04				
v/c Ratio	0.65	0.06		0.31	0.47	
Uniform Delay, d1	5.2	3.1		3.8	21.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.0		0.1	2.0	
Delay (s)	5.9	3.1		3.8	23.2	
Level of Service	A	A		A	C	
Approach Delay (s)	5.8			3.8	23.2	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	50.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



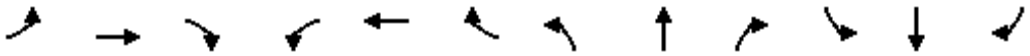
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	127	28	85	202	15	179	127	179	10	82	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.91		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)	1652	1692		1652	1721		1652	1586		1652	1739	
Flt Permitted	0.61	1.00		0.65	1.00		0.48	1.00		0.56	1.00	
Satd. Flow (perm)	1064	1692		1132	1721		833	1586		973	1739	
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)	3	138	30	92	220	16	195	138	195	11	89	0
RTOR Reduction (vph)	0	17	0	0	5	0	0	103	0	0	0	0
Lane Group Flow (vph)	3	151	0	92	231	0	195	230	0	11	89	0
Turn Type	Perm			Perm			pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.7	8.7		8.7	8.7		18.5	18.5		8.7	8.7	
Effective Green, g (s)	8.7	8.7		8.7	8.7		18.5	18.5		8.7	8.7	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.47	0.47		0.22	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	236	376		251	382		514	748		216	386	
v/s Ratio Prot		0.09			c0.13		c0.06	0.15			0.05	
v/s Ratio Perm	0.00			0.08			c0.12			0.01		
v/c Ratio	0.01	0.40		0.37	0.60		0.38	0.31		0.05	0.23	
Uniform Delay, d1	11.9	13.0		12.9	13.7		6.4	6.4		12.0	12.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.7		0.9	2.7		0.5	0.2		0.1	0.3	
Delay (s)	11.9	13.7		13.8	16.4		6.9	6.6		12.1	12.8	
Level of Service	B	B		B	B		A	A		B	B	
Approach Delay (s)		13.7			15.7			6.7			12.7	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	39.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	759	818	502	0	0	812
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	0.95	0.95			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1652	3303	3303			2601
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1652	3303	3303			2601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	825	889	546	0	0	883
RTOR Reduction (vph)	0	0	0	0	0	47
Lane Group Flow (vph)	825	889	546	0	0	836
Confl. Peds. (#/hr)	2					
Turn Type	Prot					Over
Protected Phases	5	2	6			5
Permitted Phases						
Actuated Green, G (s)	31.4	58.1	14.7			31.4
Effective Green, g (s)	31.4	58.1	14.7			31.4
Actuated g/C Ratio	0.54	1.00	0.25			0.54
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	893	3303	836			1406
v/s Ratio Prot	c0.50	0.27	c0.17			0.32
v/s Ratio Perm						
v/c Ratio	0.92	0.27	0.65			0.59
Uniform Delay, d1	12.3	0.0	19.4			9.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	14.9	0.0	1.8			0.7
Delay (s)	27.1	0.0	21.3			9.7
Level of Service	C	A	C			A
Approach Delay (s)		13.1	21.3		9.7	
Approach LOS		B	C		A	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

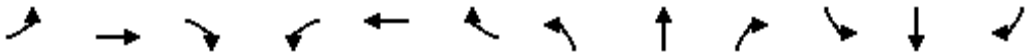


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	213	143	134	113	315	71	328	1039	83	61	507	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.93		1.00	0.97			0.99			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1652	3063		1652	3212			3240			3194	
Flt Permitted	0.29	1.00		0.40	1.00			0.62			0.63	
Satd. Flow (perm)	497	3063		689	3212			2038			2014	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.00	0.92	0.92	0.92
Adj. Flow (vph)	232	155	146	123	342	77	357	1129	83	66	551	147
RTOR Reduction (vph)	0	129	0	0	16	0	0	3	0	0	17	0
Lane Group Flow (vph)	232	172	0	123	403	0	0	1566	0	0	747	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.0	14.0		22.0	14.0			82.0			82.0	
Effective Green, g (s)	22.0	14.0		22.0	14.0			82.0			82.0	
Actuated g/C Ratio	0.18	0.12		0.18	0.12			0.68			0.68	
Clearance Time (s)	4.0	6.0		4.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	168	357		191	375			1393			1376	
v/s Ratio Prot	c0.09	0.06		0.04	0.13							
v/s Ratio Perm	c0.16			0.08				c0.77			0.37	
v/c Ratio	1.38	0.48		0.64	1.07			1.12			0.54	
Uniform Delay, d1	47.3	49.6		43.3	53.0			19.0			9.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	204.1	1.0		7.2	67.9			65.7			0.4	
Delay (s)	251.4	50.6		50.6	120.9			84.7			10.0	
Level of Service	F	D		D	F			F			B	
Approach Delay (s)		138.0			104.9			84.7			10.0	
Approach LOS		F			F			F			B	

Intersection Summary			
HCM Average Control Delay	79.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	491	343	207	1076	21	17	169	52	271	94	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		0.95	1.00		0.95		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00		1.00	0.96		1.00	0.95	
Flt Protected		1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3302	1478		3269		1652	3186		1652	3140	
Flt Permitted		0.94	1.00		0.73		0.66	1.00		0.43	1.00	
Satd. Flow (perm)		3108	1478		2419		1140	3186		748	3140	
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)	5	534	373	225	1170	23	18	184	57	295	102	50
RTOR Reduction (vph)	0	0	176	0	1	0	0	33	0	0	38	0
Lane Group Flow (vph)	0	539	197	0	1417	0	18	208	0	295	114	0
Turn Type	Perm		Perm	Perm			pm+pt			pm+pt		
Protected Phases		6			2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)		48.0	48.0		48.0		18.9	15.0		31.0	21.1	
Effective Green, g (s)		48.0	48.0		48.0		18.9	15.0		31.0	21.1	
Actuated g/C Ratio		0.53	0.53		0.53		0.21	0.16		0.34	0.23	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1639	780		1276		259	525		354	728	
v/s Ratio Prot							0.00	0.07		c0.09	0.04	
v/s Ratio Perm		0.17	0.13		c0.59		0.01			c0.19		
v/c Ratio		0.33	0.25		1.11		0.07	0.40		0.83	0.16	
Uniform Delay, d1		12.3	11.7		21.5		28.9	34.0		25.8	27.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.2		61.1		0.1	0.5		15.4	0.1	
Delay (s)		12.4	11.9		82.6		29.0	34.5		41.2	28.0	
Level of Service		B	B		F		C	C		D	C	
Approach Delay (s)		12.2			82.6			34.1			36.7	
Approach LOS		B			F			C			D	

Intersection Summary			
HCM Average Control Delay	50.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

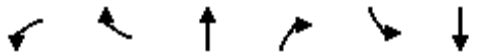


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	74	350	205	110	6	795	412	165	3	186	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			6.0			6.0	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frt		1.00	0.85		1.00			0.98			1.00	
Flt Protected		0.98	1.00		0.97			0.97			1.00	
Satd. Flow (prot)		1698	1478		1680			3152			3285	
Flt Permitted		0.75	1.00		0.71			0.69			0.94	
Satd. Flow (perm)		1300	1478		1236			2254			3084	
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)	72	80	380	223	120	7	864	448	179	3	202	7
RTOR Reduction (vph)	0	0	283	0	1	0	0	12	0	0	3	0
Lane Group Flow (vph)	0	152	97	0	349	0	0	1479	0	0	209	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		23.0	23.0		23.0			55.0			55.0	
Effective Green, g (s)		23.0	23.0		23.0			55.0			55.0	
Actuated g/C Ratio		0.26	0.26		0.26			0.61			0.61	
Clearance Time (s)		6.0	6.0		6.0			6.0			6.0	
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)		332	378		316			1377			1885	
v/s Ratio Prot												
v/s Ratio Perm		0.12	0.07		c0.28			c0.66			0.07	
v/c Ratio		0.46	0.26		1.11			1.29dl			0.11	
Uniform Delay, d1		28.2	26.7		33.5			17.5			7.3	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		1.0	0.4		81.9			46.9			0.0	
Delay (s)		29.2	27.1		115.4			64.4			7.3	
Level of Service		C	C		F			E			A	
Approach Delay (s)		27.7			115.4			64.4			7.3	
Approach LOS		C			F			E			A	

Intersection Summary			
HCM Average Control Delay	59.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.5%	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



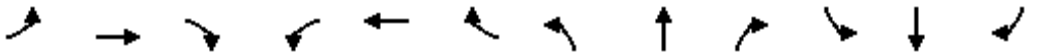
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	59	122	1298	37	35	705
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1555		3290			3295
Flt Permitted	0.98		1.00			0.83
Satd. Flow (perm)	1555		3290			2747
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	133	1411	40	38	766
RTOR Reduction (vph)	24	0	3	0	0	0
Lane Group Flow (vph)	173	0	1448	0	0	804
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	8.9		30.0			30.0
Effective Green, g (s)	8.9		30.0			30.0
Actuated g/C Ratio	0.17		0.59			0.59
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	272		1939			1619
v/s Ratio Prot	c0.11		c0.44			
v/s Ratio Perm						0.29
v/c Ratio	0.64		0.75			0.50
Uniform Delay, d1	19.5		7.7			6.1
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	4.8		1.6			0.2
Delay (s)	24.3		9.3			6.3
Level of Service	C		A			A
Approach Delay (s)	24.3		9.3			6.3
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

2035

3-Lane Scenario

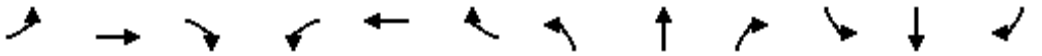
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	15	15	166	100	171	40	1051	81	67	439	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1620		1752	1881	1568	1805	1863	1524	1597	1852	
Flt Permitted	0.69	1.00		0.44	1.00	1.00	0.40	1.00	1.00	0.04	1.00	
Satd. Flow (perm)	1305	1620		815	1881	1568	766	1863	1524	75	1852	
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)	28	16	16	180	109	186	43	1142	88	73	477	23
RTOR Reduction (vph)	0	15	0	0	0	165	0	0	16	0	1	0
Lane Group Flow (vph)	28	17	0	180	109	21	43	1142	72	73	499	0
Heavy Vehicles (%)	0%	17%	0%	3%	1%	3%	0%	2%	6%	13%	2%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt		pm+ov	pm+pt		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	14.6	9.0		27.4	15.8	15.8	97.6	89.9	102.3	97.6	89.9	
Effective Green, g (s)	14.6	9.0		27.4	15.8	15.8	97.6	89.9	102.3	97.6	89.9	
Actuated g/C Ratio	0.10	0.06		0.19	0.11	0.11	0.68	0.63	0.72	0.68	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	153	102		237	208	173	579	1171	1154	133	1164	
v/s Ratio Prot	0.01	0.01		c0.07	0.06		0.00	c0.61	0.01	c0.03	0.27	
v/s Ratio Perm	0.01			c0.08		0.01	0.05		0.04	0.35		
v/c Ratio	0.18	0.17		0.76	0.52	0.12	0.07	0.98	0.06	0.55	0.43	
Uniform Delay, d1	58.6	63.4		52.6	60.0	57.3	8.1	25.5	6.1	34.5	13.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.8		13.1	2.4	0.3	0.1	20.4	0.0	4.6	0.3	
Delay (s)	59.1	64.2		65.6	62.4	57.6	8.2	45.9	6.1	39.1	13.7	
Level of Service	E	E		E	E	E	A	D	A	D	B	
Approach Delay (s)		61.8			61.8			41.8			17.0	
Approach LOS		E			E			D			B	

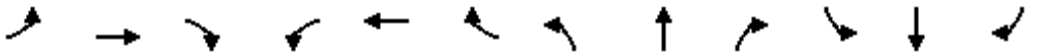
Intersection Summary			
HCM Average Control Delay	40.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	143.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	10	4	165	52	456	4	697	93	246	349	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1830		1770	1860	
Flt Permitted	0.80	1.00	1.00	0.36	1.00	1.00	0.53	1.00		0.07	1.00	
Satd. Flow (perm)	1490	1863	1583	677	1863	1583	996	1830		125	1860	
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)	9	11	4	179	57	496	4	758	101	267	379	4
RTOR Reduction (vph)	0	0	4	0	0	200	0	4	0	0	0	0
Lane Group Flow (vph)	9	11	0	179	57	296	4	855	0	267	383	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	6.8	5.0	5.0	21.1	13.3	26.7	55.2	53.4		72.8	65.0	
Effective Green, g (s)	6.8	5.0	5.0	21.1	13.3	26.7	55.2	53.4		72.8	65.0	
Actuated g/C Ratio	0.06	0.05	0.05	0.20	0.13	0.25	0.52	0.50		0.69	0.61	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	100	88	75	239	234	489	532	923		294	1142	
v/s Ratio Prot	0.00	0.01		c0.07	0.03	c0.08	0.00	0.47		c0.11	0.21	
v/s Ratio Perm	0.00		0.00	0.08		0.11	0.00			c0.51		
v/c Ratio	0.09	0.12	0.00	0.75	0.24	0.60	0.01	0.93		0.91	0.34	
Uniform Delay, d1	46.6	48.4	48.1	38.0	41.8	34.9	12.2	24.4		33.7	9.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.6	0.0	12.1	0.5	2.1	0.0	14.8		29.6	0.2	
Delay (s)	47.0	49.0	48.1	50.1	42.3	37.1	12.2	39.2		63.3	10.1	
Level of Service	D	D	D	D	D	D	B	D		E	B	
Approach Delay (s)		48.1			40.6			39.1			32.0	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	37.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	105.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

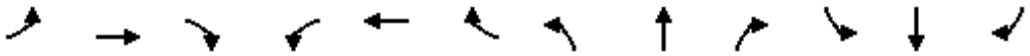


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	45	110	4	41	5	141	1277	11	33	676	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.92		1.00	0.98		1.00	1.00		1.00	0.98	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696		1770	1835		1770	1860		1770	1825	
Flt Permitted		0.95		0.29	1.00		0.24	1.00		0.04	1.00	
Satd. Flow (perm)		1614		532	1835		438	1860		75	1825	
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)	25	49	120	4	45	5	153	1388	12	36	735	115
RTOR Reduction (vph)	0	41	0	0	3	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	153	0	4	47	0	153	1400	0	36	846	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)		14.0		14.0	14.0		110.0	102.1		103.6	98.9	
Effective Green, g (s)		14.0		14.0	14.0		110.0	102.1		103.6	98.9	
Actuated g/C Ratio		0.10		0.10	0.10		0.79	0.74		0.75	0.71	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		163		54	185		423	1368		113	1300	
v/s Ratio Prot					0.03		c0.02	c0.75		0.01	0.46	
v/s Ratio Perm		c0.09		0.01			0.27			0.23		
v/c Ratio		0.94		0.07	0.26		0.36	1.02		0.32	0.65	
Uniform Delay, d1		62.0		56.5	57.6		8.4	18.4		37.6	10.7	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		51.6		0.6	0.7		0.5	30.4		1.6	1.2	
Delay (s)		113.5		57.1	58.3		8.9	48.7		39.3	11.9	
Level of Service		F		E	E		A	D		D	B	
Approach Delay (s)		113.5			58.2			44.8			13.0	
Approach LOS		F			E			D			B	

Intersection Summary			
HCM Average Control Delay	39.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	138.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	1297	75	0	615	76	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		1.00	0.95	
Satd. Flow (prot)	1863	1583		1863	1770	
Flt Permitted	1.00	1.00		1.00	0.95	
Satd. Flow (perm)	1863	1583		1863	1770	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1410	82	0	668	83	0
RTOR Reduction (vph)	0	19	0	0	0	0
Lane Group Flow (vph)	1410	63	0	668	83	0
Turn Type		Perm				
Protected Phases	2			6	8	
Permitted Phases		2				
Actuated Green, G (s)	74.0	74.0		74.0	11.0	
Effective Green, g (s)	74.0	74.0		74.0	11.0	
Actuated g/C Ratio	0.76	0.76		0.76	0.11	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1421	1208		1421	201	
v/s Ratio Prot	c0.76			0.36	c0.05	
v/s Ratio Perm		0.04				
v/c Ratio	0.99	0.05		0.47	0.41	
Uniform Delay, d1	11.2	2.8		4.3	40.0	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.9	0.0		0.2	1.4	
Delay (s)	33.1	2.9		4.5	41.4	
Level of Service	C	A		A	D	
Approach Delay (s)	31.5			4.5	41.4	
Approach LOS	C			A	D	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	97.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



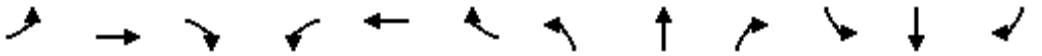
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	127	28	85	202	15	179	127	179	10	82	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.91		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)	1770	1813		1770	1844		1770	1699		1770	1863	
Flt Permitted	0.61	1.00		0.48	1.00		0.51	1.00		0.56	1.00	
Satd. Flow (perm)	1140	1813		891	1844		955	1699		1043	1863	
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)	3	138	30	92	220	16	195	138	195	11	89	0
RTOR Reduction (vph)	0	10	0	0	3	0	0	61	0	0	0	0
Lane Group Flow (vph)	3	158	0	92	233	0	195	272	0	11	89	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.1	15.5		28.3	21.1		28.2	21.0		17.0	15.4	
Effective Green, g (s)	17.1	15.5		28.3	21.1		28.2	21.0		17.0	15.4	
Actuated g/C Ratio	0.25	0.22		0.41	0.30		0.41	0.30		0.25	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	296	406		455	561		473	515		273	414	
v/s Ratio Prot	0.00	0.09		c0.02	c0.13		c0.04	c0.16		0.00	0.05	
v/s Ratio Perm	0.00			0.06			0.12			0.01		
v/c Ratio	0.01	0.39		0.20	0.42		0.41	0.53		0.04	0.21	
Uniform Delay, d1	19.7	22.9		13.0	19.2		14.0	20.0		19.9	22.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.6		0.2	0.5		0.6	1.0		0.1	0.3	
Delay (s)	19.7	23.5		13.3	19.7		14.5	21.0		19.9	22.3	
Level of Service	B	C		B	B		B	C		B	C	
Approach Delay (s)		23.4			17.9			18.6			22.0	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	759	818	502	0	0	812
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	1.00	1.00			0.88
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	1.00	1.00			0.85
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	1863	1863			2787
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	1863	1863			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	825	889	546	0	0	883
RTOR Reduction (vph)	0	0	0	0	0	111
Lane Group Flow (vph)	825	889	546	0	0	772
Confl. Peds. (#/hr)	2					
Turn Type	Prot					Over
Protected Phases	5	2	6			5
Permitted Phases						
Actuated Green, G (s)	38.4	75.4	25.0			38.4
Effective Green, g (s)	38.4	75.4	25.0			38.4
Actuated g/C Ratio	0.51	1.00	0.33			0.51
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	901	1863	618			1419
v/s Ratio Prot	c0.47	0.48	c0.29			0.28
v/s Ratio Perm						
v/c Ratio	0.92	0.48	0.88			0.54
Uniform Delay, d1	17.0	0.0	23.8			12.6
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	13.7	0.2	14.1			0.4
Delay (s)	30.7	0.2	37.9			13.0
Level of Service	C	A	D			B
Approach Delay (s)		14.9	37.9		13.0	
Approach LOS		B	D		B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

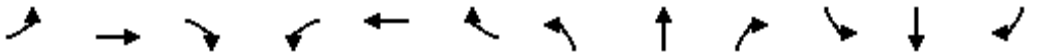


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	213	143	134	113	315	71	328	1039	83	61	507	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.97		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3282		1770	3442		1770	1844		1770	1804	
Flt Permitted	0.24	1.00		0.39	1.00		0.18	1.00		0.05	1.00	
Satd. Flow (perm)	438	3282		731	3442		328	1844		98	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.00	0.92	0.92	0.92
Adj. Flow (vph)	232	155	146	123	342	77	357	1129	83	66	551	147
RTOR Reduction (vph)	0	112	0	0	13	0	0	2	0	0	6	0
Lane Group Flow (vph)	232	189	0	123	406	0	357	1210	0	66	692	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	29.0	17.0		25.0	15.0		103.0	89.2		83.6	75.8	
Effective Green, g (s)	29.0	17.0		25.0	15.0		103.0	89.2		83.6	75.8	
Actuated g/C Ratio	0.20	0.11		0.17	0.10		0.70	0.60		0.56	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	194	377		194	349		435	1111		143	924	
v/s Ratio Prot	c0.10	0.06		0.04	0.12		c0.12	c0.66		0.02	0.38	
v/s Ratio Perm	c0.14			0.06			0.45			0.23		
v/c Ratio	1.20	0.50		0.63	1.16		0.82	1.09		0.46	0.75	
Uniform Delay, d1	56.5	61.5		55.0	66.5		24.6	29.4		32.6	28.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	127.4	1.0		6.6	100.8		11.8	54.8		2.4	3.4	
Delay (s)	183.8	62.6		61.6	167.3		36.3	84.2		35.0	31.9	
Level of Service	F	E		E	F		D	F		C	C	
Approach Delay (s)		115.3			143.3			73.3			32.2	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM Average Control Delay	81.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	491	343	207	1076	21	17	169	52	271	94	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	2.5	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1857		1770	3414		1770	3365	
Flt Permitted	0.07	1.00	1.00	0.31	1.00		0.66	1.00		0.40	1.00	
Satd. Flow (perm)	122	1863	1583	585	1857		1221	3414		752	3365	
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)	5	534	373	225	1170	23	18	184	57	295	102	50
RTOR Reduction (vph)	0	0	112	0	1	0	0	25	0	0	44	0
Lane Group Flow (vph)	5	534	261	225	1192	0	18	216	0	295	108	0
Turn Type	Perm		pm+ov	pm+pt			pm+pt			pm+pt		
Protected Phases		6	7	5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		
Actuated Green, G (s)	61.0	61.0	71.0	75.0	75.0		22.3	12.3		28.3	15.3	
Effective Green, g (s)	61.0	61.0	71.0	75.0	75.0		22.3	12.3		28.3	15.3	
Actuated g/C Ratio	0.52	0.52	0.60	0.63	0.63		0.19	0.10		0.24	0.13	
Clearance Time (s)	6.0	6.0	6.0	2.5	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	63	961	1030	486	1177		277	355		292	435	
v/s Ratio Prot		0.29	0.02	0.05	c0.64		0.01	0.06		c0.11	0.03	
v/s Ratio Perm	0.04		0.14	0.25			0.01			c0.13		
v/c Ratio	0.08	0.56	0.25	0.46	1.01		0.06	0.61		1.01	0.25	
Uniform Delay, d1	14.5	19.4	11.2	11.5	21.6		39.4	50.7		42.9	46.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.7	0.1	0.7	29.5		0.1	2.9		55.3	0.3	
Delay (s)	15.0	20.2	11.3	12.2	51.1		39.5	53.6		98.2	46.6	
Level of Service	B	C	B	B	D		D	D		F	D	
Approach Delay (s)		16.5			45.0			52.7			80.7	
Approach LOS		B			D			D			F	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	118.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	109.6%	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												
Volume (vph)	66	74	350	205	110	6	795	412	165	3	186	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.96		1.00	0.99	
Flt Protected		0.98	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1820	1583		1800		1770	1783		1770	1853	
Flt Permitted		0.75	1.00		0.70		0.28	1.00		0.43	1.00	
Satd. Flow (perm)		1393	1583		1297		516	1783		795	1853	
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)	72	80	380	223	120	7	864	448	179	3	202	7
RTOR Reduction (vph)	0	0	280	0	1	0	0	15	0	0	1	0
Lane Group Flow (vph)	0	152	100	0	349	0	864	612	0	3	208	0
Turn Type	Perm		Perm	Perm			pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		26.0	26.0		26.0		61.0	61.0		14.0	14.0	
Effective Green, g (s)		26.0	26.0		26.0		61.0	61.0		14.0	14.0	
Actuated g/C Ratio		0.26	0.26		0.26		0.62	0.62		0.14	0.14	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		366	416		341		837	1099		112	262	
v/s Ratio Prot							c0.43	0.34			0.11	
v/s Ratio Perm		0.11	0.06		c0.27		c0.21			0.00		
v/c Ratio		0.42	0.24		1.02		1.03	0.56		0.03	0.79	
Uniform Delay, d1		30.2	28.7		36.5		21.2	11.1		36.6	41.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.3		55.1		39.7	0.6		0.1	15.2	
Delay (s)		31.0	29.0		91.6		60.9	11.7		36.7	56.3	
Level of Service		C	C		F		E	B		D	E	
Approach Delay (s)		29.6			91.6			40.2			56.0	
Approach LOS		C			F			D			E	

Intersection Summary			
HCM Average Control Delay	46.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	99.0	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	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	59	122	1298	37	35	705
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.91		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1666		1856		1770	1863
Flt Permitted	0.98		1.00		0.05	1.00
Satd. Flow (perm)	1666		1856		87	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	133	1411	40	38	766
RTOR Reduction (vph)	69	0	1	0	0	0
Lane Group Flow (vph)	128	0	1450	0	38	766
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	12.5		85.9		85.9	85.9
Effective Green, g (s)	12.5		85.9		85.9	85.9
Actuated g/C Ratio	0.11		0.78		0.78	0.78
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	189		1444		68	1450
v/s Ratio Prot	c0.08		c0.78			0.41
v/s Ratio Perm					0.44	
v/c Ratio	0.68		1.00		0.56	0.53
Uniform Delay, d1	47.0		12.3		4.8	4.6
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	9.2		24.7		9.6	0.3
Delay (s)	56.2		37.0		14.4	5.0
Level of Service	E		D		B	A
Approach Delay (s)	56.2		37.0			5.4
Approach LOS	E		D			A

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			