APPENDIX A

TRAFFIC STUDY

HDR | ONE COMPANY *Many Solutions*℠

Technical Memo

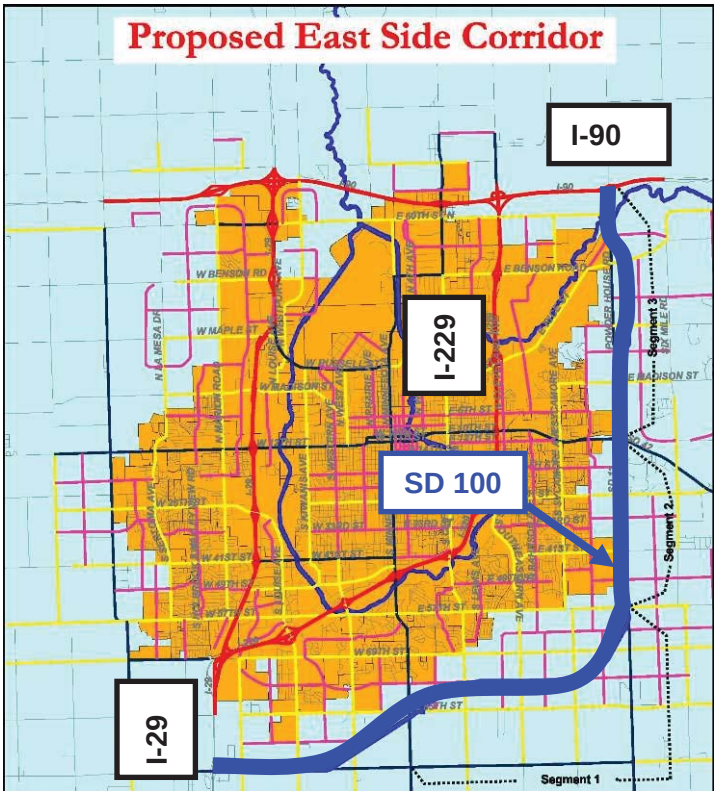
To:	SDDOT Office of Road Design		
From:	HDR	Project:	SD 100 Corridor Preservation
CC:	SDDOT Office of Planning, City of Sioux Falls Planning and Engineering Departments		
Date:	November 2011	Job No:	32194

RE: SD 100 Traffic Study UPDATE 2011

Project Description:

Based on the 1995 Sioux Falls Regional Transportation Study, a "*high-speed*" limited access arterial system was identified to serve the transportation needs of the city's growth area within the planning period. The completion of the regional transportation study prompted the City of Sioux Falls to further examine this concept by completing the East Side Corridor Study and East Side Corridor Environmental Assessment. Based on the recommendations presented in those studies the City of Sioux Falls and the South Dakota Department of Transportation have initiated the ***"SD 100 Corridor Preservation"*** project to complete preliminary design and right-of-way plans for the identified corridor. This corridor preservation process will allow the South Dakota Department of Transportation to preserve the corridor needed to construct SD 100, so delays in completing the overall project can be minimized. ***Figure 1*** indicates the approximate location of SD 100 within the Sioux Falls Metropolitan area.

Figure 1: Proposed East Side Corridor (SD 100)



Project Purpose:

The overall goal of the SD 100 corridor preservation project is to complete preliminary design and generate right-of-way plans for the South Dakota Department of Transportation. To determine the appropriate lane and intersection configurations for completion of the preliminary plans, an analysis and review of the 2025 traffic projections was completed. The current update of the traffic study carries the analysis forward to reflect the most recent regional traffic forecasting model for 2035. *The updated traffic study also analyzed projected traffic volumes to year 2050 to provide an* ***indication*** *of what the LOS would be. For all cases a minimum LOS or better is maintained, while* ***assuming no additional infrastructure is provided in and around Sioux Falls that isn't already included in the City's current traffic model.*** It provides updated intersection and access analysis for consideration in an updated review of the East Side Corridor Environmental Assessment. Acceptable access along SD 100 will be limited to 1 mile intervals except from Madison Street to 41st Street, and in the vicinity of the Interstate 29 interchange, where commercial developments require access at ½ mile intervals. The original East Side Corridor Environmental Assessment also recommended interchanges at Rice Street (realigned Benson Road), 57th Street/SD 11, and Minnesota Avenue to separate the SD 100 thru traffic from the cross street arterial traffic. All recommendations stated in the Environmental Assessment will be reviewed against the traffic volumes forecasted to determine if alternative access locations will be needed.

Traffic Volume Development:

Forecast Model Methodology: The South Dakota Department of Transportation requires that a traffic analysis be completed using traffic projections for at least 20 years into the future for all roadway design projects. To meet those requirements for this project, the travel demand forecast model that was created and is maintained by the City of Sioux Falls Planning Department for the Sioux Falls Metropolitan Planning Organization was utilized. The forecast model constructed by the City of Sioux Falls Planning staff has been updated to include all proposed roadways in the area including SD 100. The model is updated approximately every five years to include any additional proposed roadways and land uses not in the previous version. The model is then recalibrated to ensure forecast volumes are within model tolerance. The 2050 forecasts were developed based on growth factors reflecting changes between 2035 and 2050. The growth factors averaged 1.4, representing 40% approximate growth.

Turning Movement Methodology: AM and PM peak hour turning movement volumes at the study area intersections and adjacent intersections were calculated using the AM and PM peak hour directional link volumes from the travel demand model. HDR created a model that allows the approach and departure link volumes into a given intersection to be assigned and balanced based on existing turning movement data, existing average daily traffic data, future hourly traffic data, future land use plans, and engineering judgment.

Traffic Analysis Review and Discussion:

Traffic Forecasting and Operations:

Standard: Table 15-1 of Chapter 15 of the South Dakota Road Design Manual establishes the goals for operations of all roadways under SDDOT jurisdiction. The desirable level of service for Urban Principal Arterials, such as SD 100, is LOS C, with a minimum of LOS D. Those standards were used in determining the recommendations for future improvements on SD 100.

Review: Traffic forecasts prepared during the original East Side Corridor Study were completed using the City of Sioux Falls travel demand model available at that time. The traffic forecasts were based on land development to the year 2015. The findings of the traffic analysis indicated that a 4-lane divided roadway would provide the capacity required to serve the calculated traffic volumes. It was calculated in 2015 that areas south of South Dakota Highway 42 would experience traffic in the range of 18,000 to 20,000 vehicles per day. Areas north of South Dakota 42 would experience traffic volumes in the range of 32,000 to 36,000 vehicles per day.

Discussion: Traffic forecasts prepared for this analysis of SD 100 were again completed using the City of Sioux Falls travel demand model. The traffic forecasts were based on the land development to the year 2035 and were extended to estimate traffic for 2050. The findings of the traffic analysis indicated that a 6-lane divided roadway would provide the capacity required to serve the calculated traffic volumes throughout the corridor. It was calculated that in 2035, corridor traffic volumes would range from 33,000 vehicles per day to over 51,000 vehicles per day. By 2050, volumes may range from about 46,000 vehicles per day to over 71,000 vehicles per day. Note that analysis for 2025 completed in previous analysis called for a 6-lane section north of 69th Street and a 4-lane section south of 69th Street.

Based on the most current projected volumes, it is recommended that the SD 100 corridor typical section be updated to show a 6-lane roadway to support future traffic volumes. With the construction beginning along this corridor in 2007, the actual need for the additional thru lane may not be warranted until further development along the corridor takes place. Until the additional lane is warranted by a traffic analysis, a 4-lane roadway delineated with pavement markings would be acceptable.

Proposed Interchanges:

Review: Grade-separated interchanges were proposed in the original East Side Corridor Study at intersections with Minnesota Avenue, SD Highway 11, and Rice Street. Grade Separated structures will span existing railroads and other local roads that are not provided with direct access to the East Side Corridor.

Discussion: Traffic forecasts prepared for SD 100 support the recommendations for interchanges at 57th Street/SD 100 and Benson Road/SD 100. The City of Sioux Falls has in their Long Range Plan to extend Benson Road to East Rice Street (east of Six Mile Road) and would replace E. Rice Street as the functional arterial roadway connecting Sioux Falls to Brandon. To construct interchanges at the above locations, the recommended nearest at-grade signalized intersection should be spaced at a distance approximately 1-mile or greater to allow safe weaving and merging distances from the ramp terminals to the signalized intersections. Previous analyses recommended an interchange at Minnesota Avenue because of the potential for a skewed at-grade intersection. The SD 100 alignment has since been changed to create a better intersection angle, alleviating the need for an interchange at that location. The proposed interchange at 57th Street is in response to future vehicular demand.

Access Spacing:

Review: Based on the East Side Corridor Study, at-grade intersections with traffic signals shall be placed with 1-mile access openings, except future commercial areas and where traffic analysis identifies the need for ½ mile access to accommodate projected traffic growth. Half-mile access is permitted along the SD100 corridor from 41st Street to Maple Street. Other exceptions to the 1-mile spacing will be from I-29 to Tallgrass Avenue and from 60th Street North to I-90. From I-29 to Tallgrass Avenue, the access spacing is reduced to accommodate **existing** development access

locations (three access locations within approx. 2,300 feet). Note that the existing access locations in this section are grandfathered into the access plan and are not intended to operate as signalized access points. The access exception from 60th Street North to I-90 is due to the need to avoid the Big Sioux River floodway and is approximately 1,600 feet. The operations for both 60th Street North and I-90 operate at an acceptable LOS.

Discussion: Analysis of 2035 traffic conditions indicate that acceptable operations will be achieved with the access locations and access types previously planned. (The Albers Ave. access point listed below is one of the grandfathered access points previously mentioned and, while the overall intersection operation is acceptable, the side-street approaches operate at a low level of service as stop sign control. Alternate access is provided to the signalized intersection at Tallgrass Avenue, as Albers Avenue is not intended for signalization.) A summary of access recommendations is shown in Table 1. *The updated traffic study also analyzed projected traffic volumes to year 2050 to provide an **indication** of what the LOS would be. For all cases a minimum LOS or better is maintained, while **assuming no additional infrastructure is provided in and around Sioux Falls that isn't already included in the City's current traffic model.***

The proposed SD 100 corridor also crosses 85th Street near the intersection with Minnesota Avenue. This location is proposed as a grade separated crossing with no movements between SD 100 and 85th Street because of its close proximity to the Minnesota Avenue intersection. Since traffic on both routes will flow freely through this location, there is no concern about intersection capacity, and no method to measure operations at this location other than the unimpeded lane capacity of each route.

TABLE 1 - SD 100 ACCESS RECOMMENDATIONS
NOVEMBER, 2011

ACCESS LOCATION	ACCESS SPACING[1]	2035			2050		
		RECOMMENDED ACCESS TYPE	LEVEL OF SERVICE AM	LEVEL OF SERVICE PM	RECOMMENDED ACCESS TYPE	LEVEL OF SERVICE AM	LEVEL OF SERVICE PM
I-29	1/4 MILE	INTERCHANGE[2]	C	C	INTERCHANGE[2]	C	C
ALBERS AVENUE		INTERSECTION[1]	U	U	INTERSECTION	U	U
TALLGRASS AVENUE	1 MILE	INTERSECTION	B	C	INTERSECTION	B	C
LOUISE AVENUE		INTERSECTION	C	C	INTERSECTION	C	D
WESTERN AVENUE		INTERSECTION	C	C	INTERSECTION	C	C
MINNESOTA AVENUE		INTERSECTION	C	C	INTERSECTION	C	D
CLIFF AVENUE		INTERSECTION	C	C	INTERSECTION	D	D
SOUTHEASTERN AVENUE		INTERSECTION	C	C	INTERSECTION	C	C
SYCAMORE AVENUE		INTERSECTION	C	C	INTERSECTION	C	C
69TH STREET/SD 11		INTERSECTION	C	C	INTERSECTION	D	D
57TH STREET	1/2 MILE	INTERCHANGE[2]	C	C	INTERCHANGE[2]	C	C
41ST STREET		INTERSECTION	C	C	INTERSECTION	C	D
33RD STREET		INTERSECTION	C	C	INTERSECTION	C	D
26TH STREET		INTERSECTION	C	C	INTERSECTION	D	D
18TH STREET		INTERSECTION	C	C	INTERSECTION	C	C
ARROWHEAD PARKWAY		INTERSECTION	C	C	INTERSECTION	C	D
6TH STREET		INTERSECTION	C	C	INTERSECTION	C	C
MADISON STREET		INTERSECTION	C	C	INTERSECTION	C	D
COLLECTOR STREET	1 MILE	INTERSECTION	B	C	INTERSECTION	B	C
MAPLE STREET		INTERSECTION	C	C	INTERSECTION	D	D
BENSON ROAD/HOLLY BOULEVARD		INTERCHANGE[2]	B	B	INTERCHANGE[2]	B	B
60TH STREET NORTH	1/4 MILE	INTERSECTION	C	C	INTERSECTION	C	D
I-90		INTERCHANGE[2]	C	C	INTERCHANGE[2]	C	C

[1] ACCESS SPACING DETERMINED BY CORRIDOR STUDY, CONSIDERING LAND USE AND DEVELOPMENT PLANS

[2] LOCATION DETERMINED TO NEED INTERCHANGE TO MEET LEVEL OF SERVICE STANDARDS, INTERSECTION PROVIDED SUBSTANDARD LOS

The half-mile spacing of the SD100 Corridor was provided from 41st Street to Maple Street to provide an acceptable LOS at the major intersections (i.e. 41st Street, 26th Street, 10th Street, Madison Street, and Maple Street) while avoiding the need for an interchange.

Required Left & Right Turn Lane Lengths for Preliminary Design Purposes:

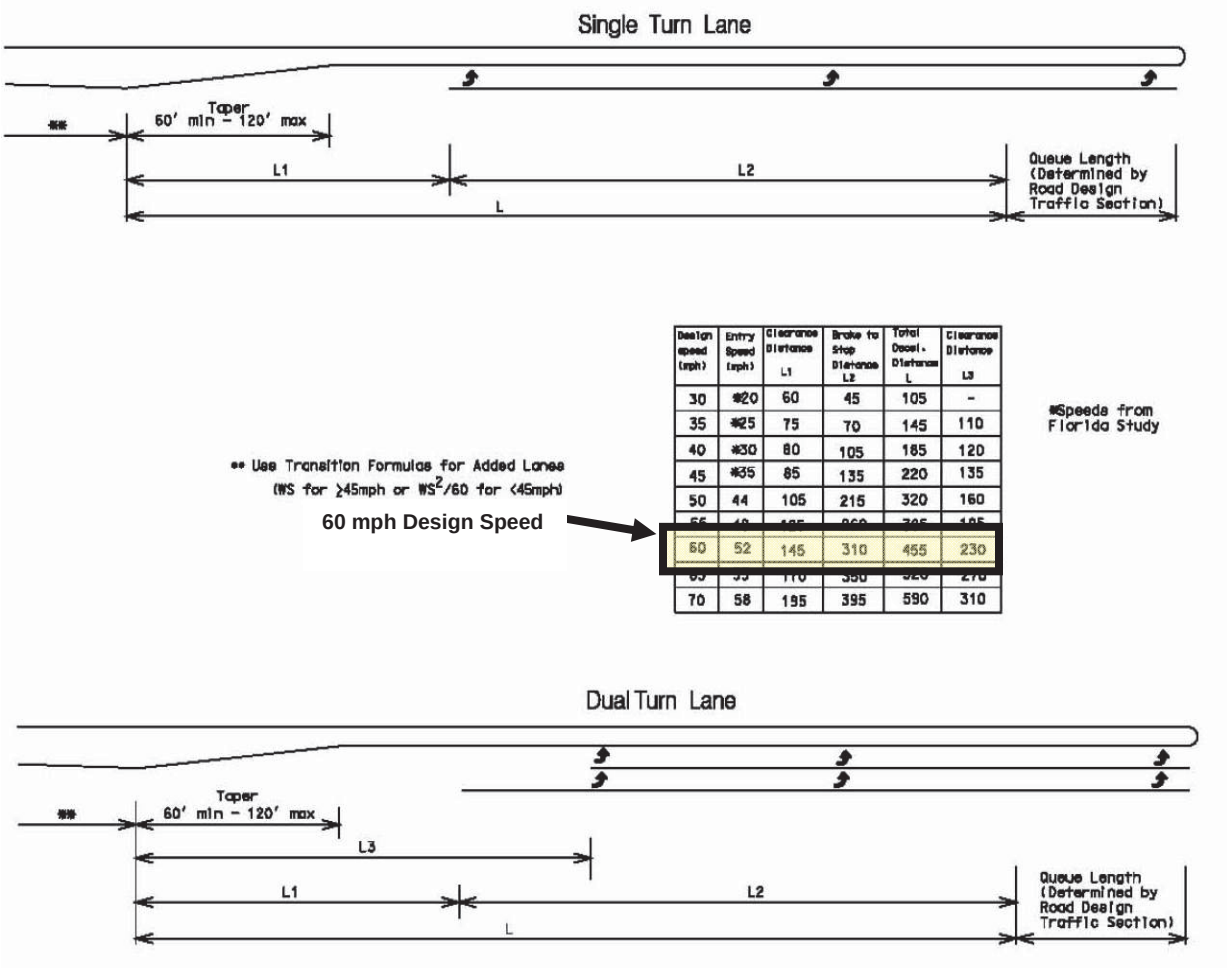
The total length of each individual turn lane will be calculated based on the 95th percentile queue length calculated in the LOS analysis. The recommended intersection geometrics will be based on either the AM or PM analysis to provide the most conservative design. Each individual intersection will be shown in figures following this section. As shown in **Figure 2** below, the 95th percentile queue length plus the deceleration distance (L) will provide the total turn lane length to begin of taper. For the "SD 100 Corridor Preservation" project a 60 mph design speed will be used to determine the deceleration distance (L).

Graphical Display of Intersection Analyses:

Locations of corridor access points are shown in **Figure 3**. A display sheet for each access location is provided following Figure 3. Each display sheet shows the intersection forecast volumes, recommended lanes, level of service, and 95th percentile queues.

Figure 2: Turn Lane Length Requirements

(SDDOT Road Design Manual, Chapter 12 – Intersections, Figure 12-18)



Design speed (mph)	Entry Speed (mph)	Clearance Distance L1	Brake to Stop Distance L2	Total Decel. Distance L	Clearance Distance L3
30	*20	60	45	105	-
35	*25	75	70	145	110
40	*30	80	105	185	120
45	*35	85	135	220	135
50	44	105	215	320	160
60	52	145	310	455	230
70	58	195	395	590	310

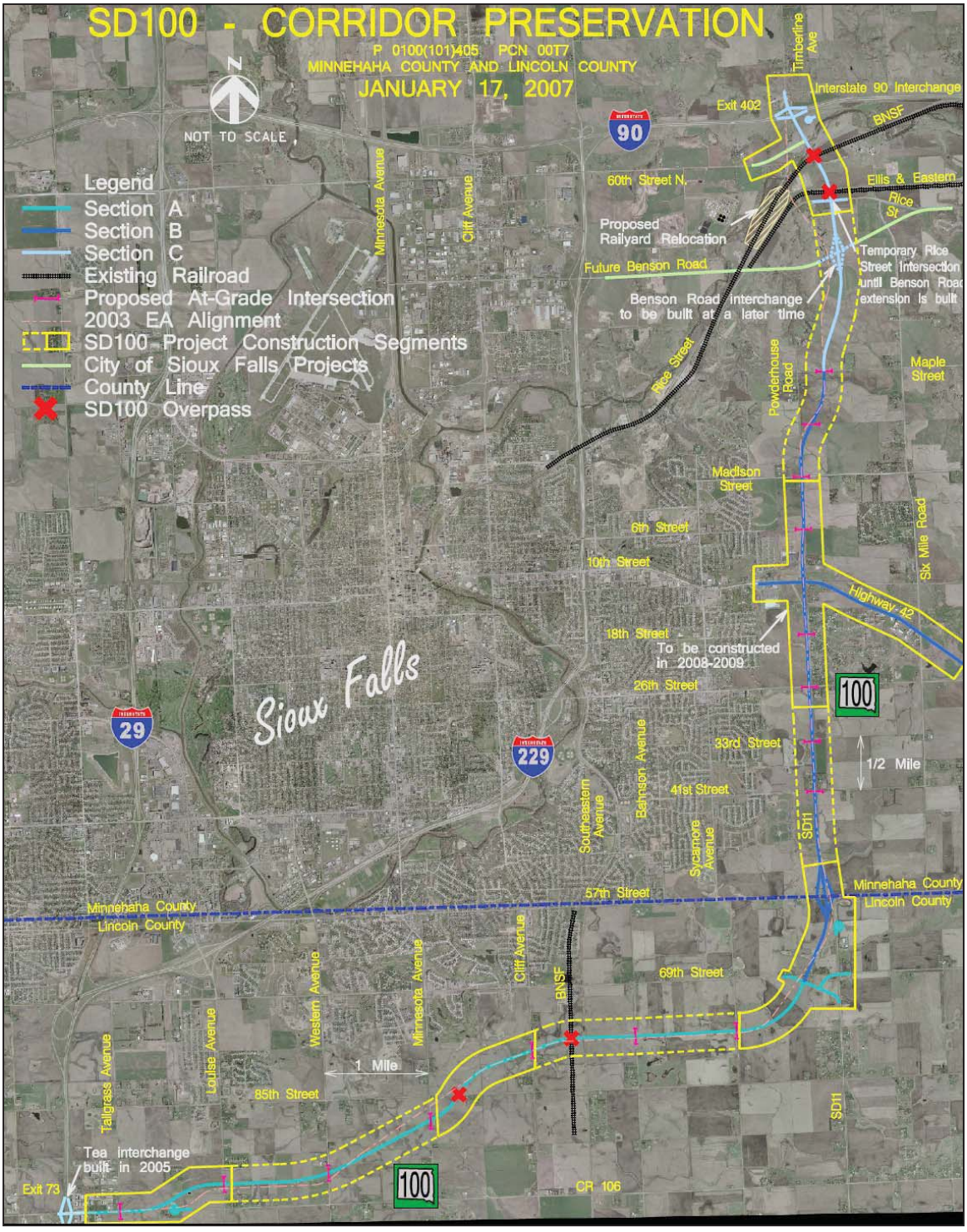

SD100 - CORRIDOR PRESERVATION
P 0100(101)405 PCN 00T7
MINNEHAHA COUNTY AND LINCOLN COUNTY
JANUARY 17, 2007
NOT TO SCALE
Legend
Section A
Section B
Section C
Existing Railroad
Proposed At-Grade Intersection
2003 EA Alignment
SD100 Project Construction Segments
City of Sioux Falls Projects
County Line
SD100 Overpass
Timberline Ave
Interstate 90 Interchange
Exit 402
BNSF
90
60th Street N.
Ellis & Eastern
Rice St
Minnesota Avenue
Cliff Avenue
Proposed Railyard Relocation
Future Benson Road
Temporary Rice Street Intersection until Benson Road extension is built
Benson Road interchange to be built at a later time
Rice Street
Powderhouse Road
Maple Street
Madison Street
6th Street
10th Street
Six Mile Road
Highway 42
18th Street
To be constructed in 2008-2009
26th Street
100
29
Sioux Falls
229
33rd Street
1/2 Mile
Bahnson Avenue
41st Street
Southeastern Avenue
Sycamore Avenue
SD11
Minnehaha County
Lincoln County
57th Street
Minnehaha County
Lincoln County
Cliff Avenue
BNSF
69th Street
Western Avenue
Minnesota Avenue
Louise Avenue
Tallgrass Avenue
1 Mile
85th Street
SD11
Tea interchange built in 2005
Exit 73
100
CR 106

FIGURE 3

I-29/SD 100 (TEA INTERCHANGE)

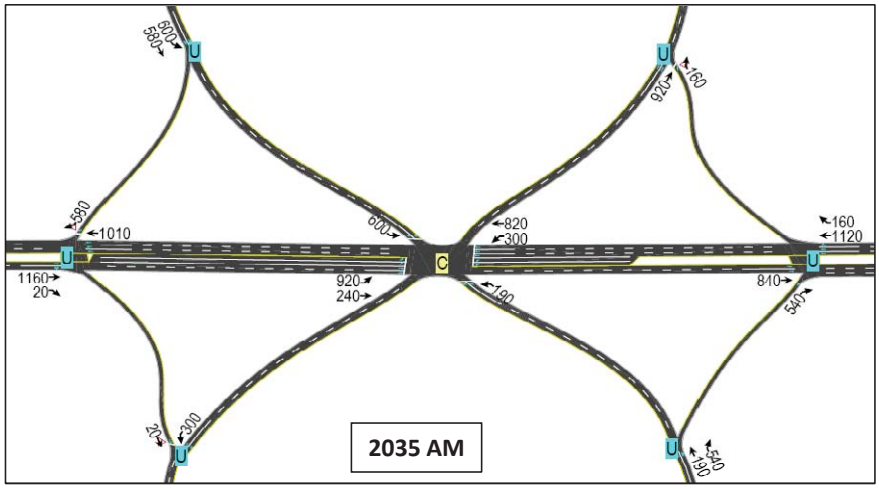
LEGEND

SIGNALIZED LEVEL OF SERVICE

C

APPROACH VOLUMES

800 →



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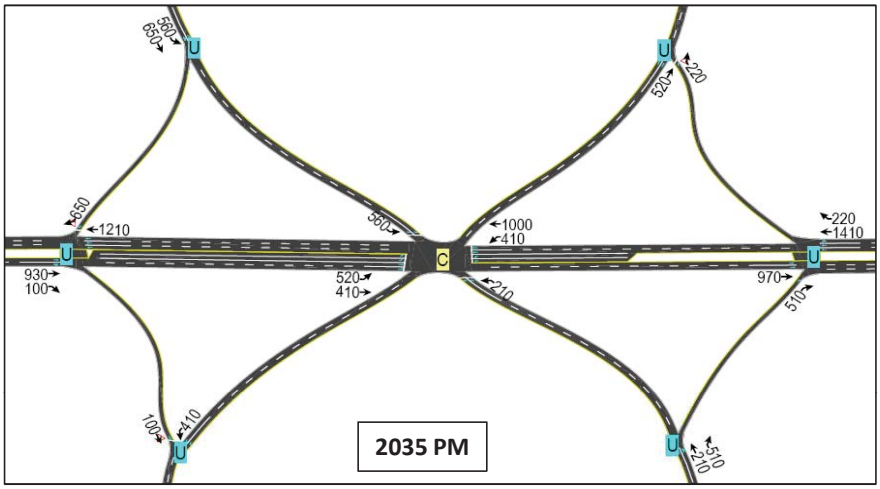
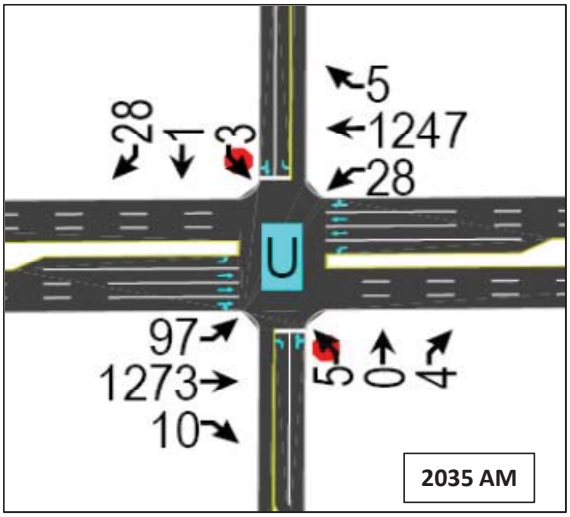


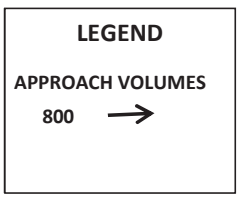
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

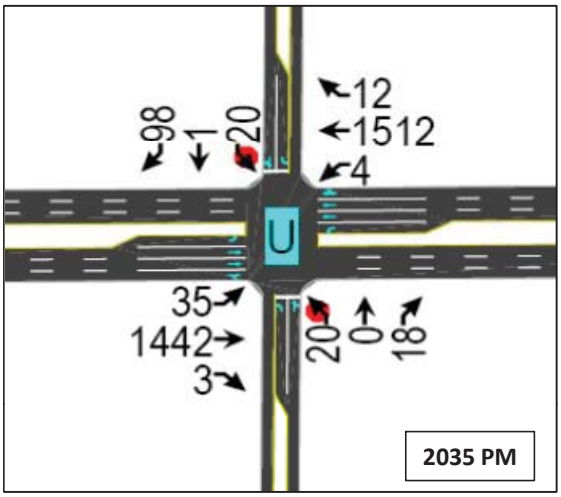
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
I-29 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	0	1
	QUEUE LENGTH	243		
	DECELERATION LENGTH	185		
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	144	370	
	DECELERATION LENGTH	455	455	
I-29 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	0	1
	QUEUE LENGTH	72		
	DECELERATION LENGTH	185		
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	361	121	
	DECELERATION LENGTH	455	455	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 4**

SD 100/ALBERS AVENUE





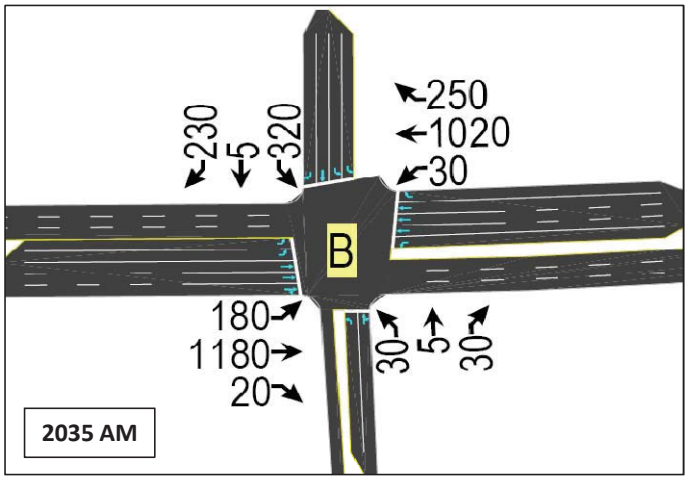


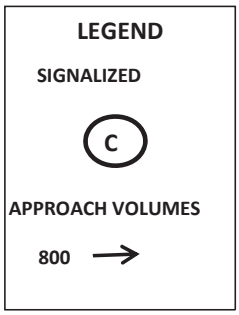
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 30 mph.

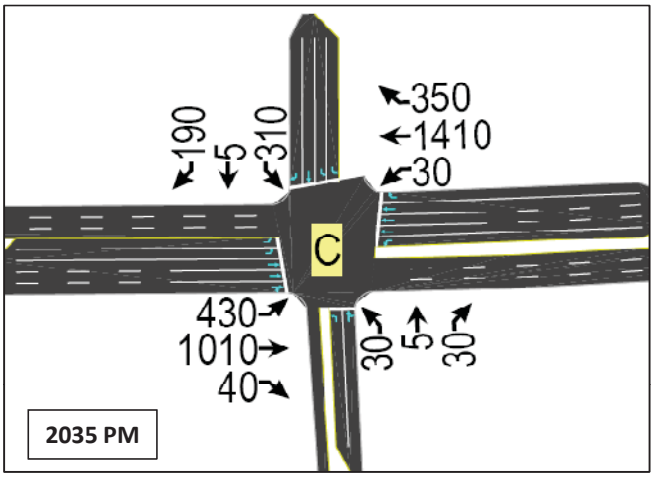
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
ALBERS SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	0
	QUEUE LENGTH	44	30	
	DECELERATION LENGTH	110	110	
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	0
	QUEUE LENGTH	5	0	
	DECELERATION LENGTH	455	455	
ALBERS NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	0
	QUEUE LENGTH	57	3	
	DECELERATION LENGTH	110	110	
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	0
	QUEUE LENGTH	14	0	
	DECELERATION LENGTH	455	455	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 4a**

SD 100/TALLGRASS AVENUE





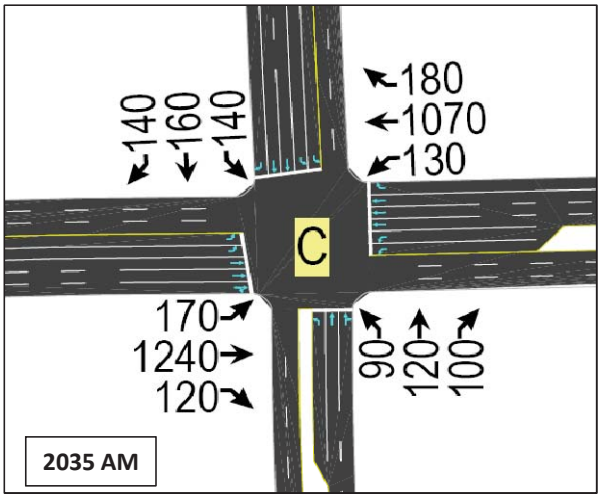


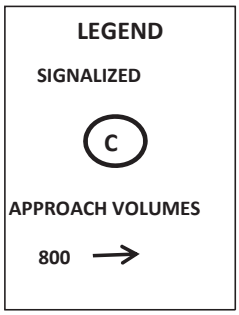
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

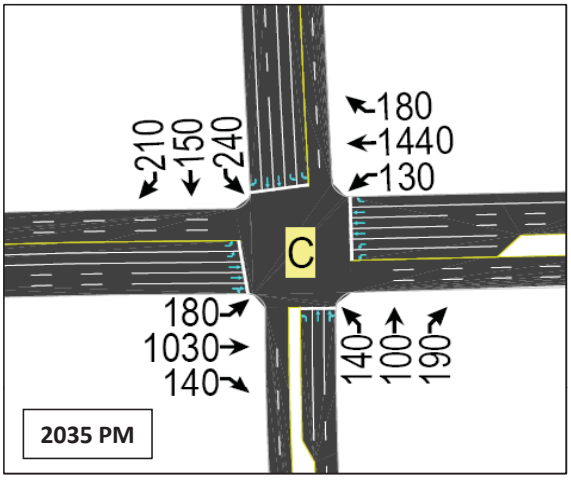
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
TALLGRASS SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	185	14	0
	DECELERATION LENGTH	185	185	185
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	1
	QUEUE LENGTH	46	368	0
	DECELERATION LENGTH	455	455	185
TALLGRASS NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	0
	QUEUE LENGTH	48	32	
	DECELERATION LENGTH	185	185	
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	0
	QUEUE LENGTH	177	226	
	DECELERATION LENGTH	455	455	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 5**

SD 100/LOUISE AVENUE





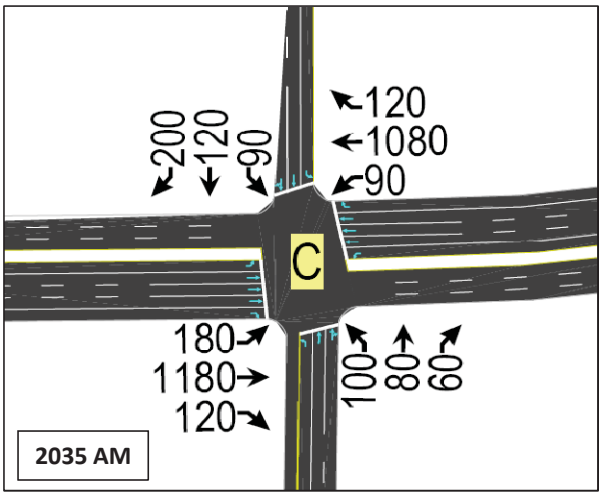


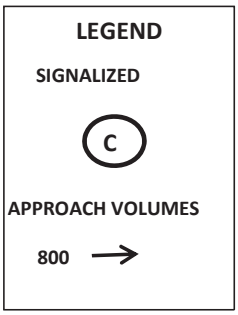
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

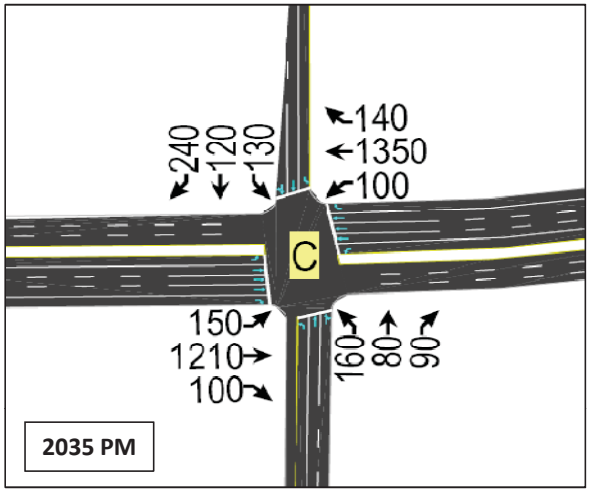
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
LOUISE SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	118	56	0
	DECELERATION LENGTH	185	185	185
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	73	353	0
	DECELERATION LENGTH	455	455	455
LOUISE NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	175	70	
	DECELERATION LENGTH	185	185	
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	0
	QUEUE LENGTH	109	311	
	DECELERATION LENGTH	455	455	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 6**

SD 100/WESTERN AVENUE





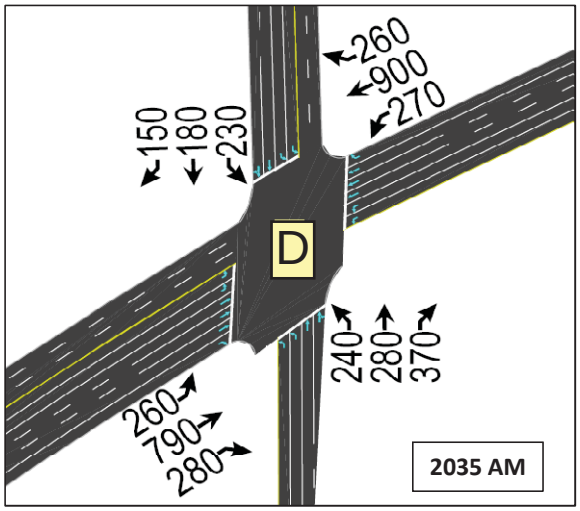


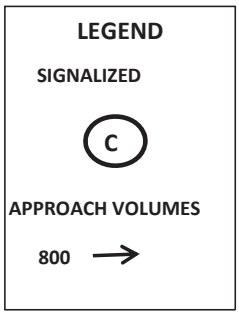
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

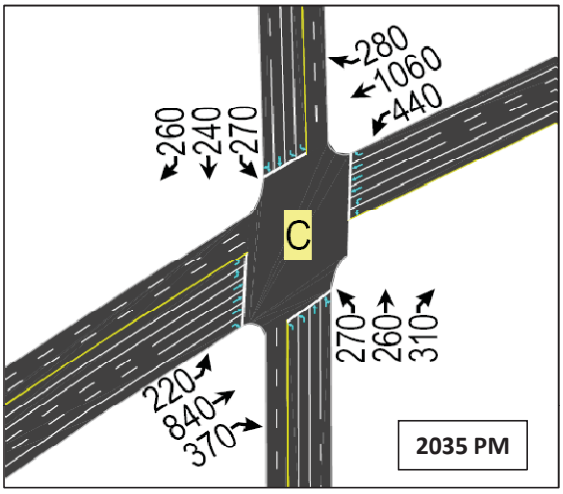
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
WESTERN SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	71	65	
	DECELERATION LENGTH	185	185	
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	1
	QUEUE LENGTH	64	296	48
	DECELERATION LENGTH	455	455	455
WESTERN NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	85	35	
	DECELERATION LENGTH	185	185	
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	1
	QUEUE LENGTH	119	227	28
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 7**

SD 100/MINNESOTA AVENUE





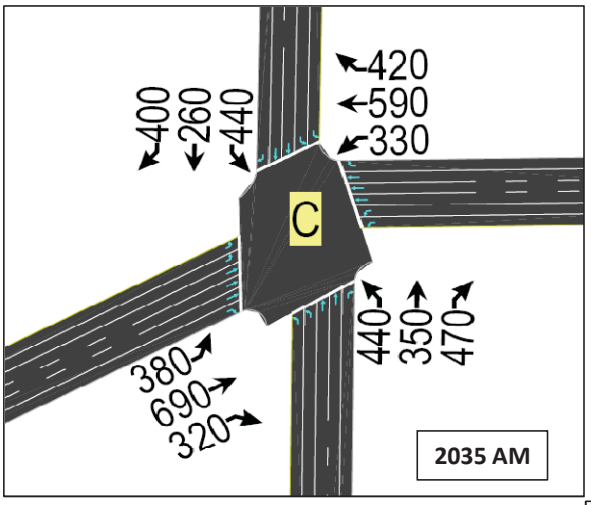


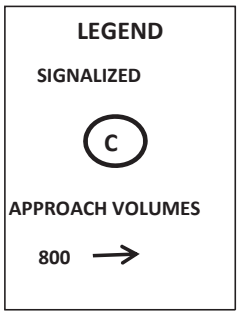
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

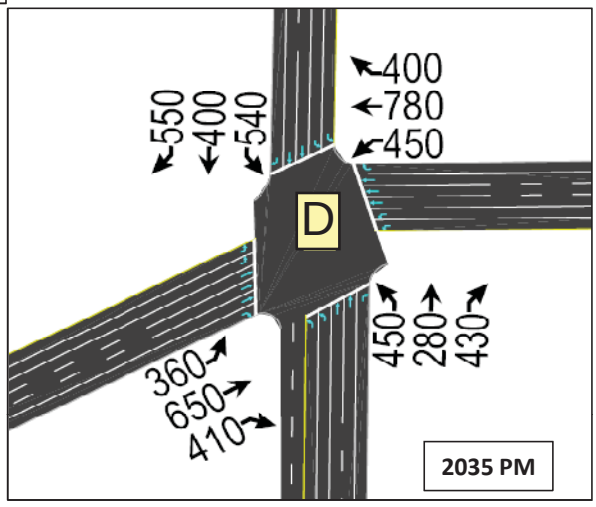
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
MINNESOTA SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	0
	QUEUE LENGTH	137	107	
	DECELERATION LENGTH	185	185	
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	196	215	75
	DECELERATION LENGTH	455	455	455
MINNESOTA NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	0
	QUEUE LENGTH	137	131	
	DECELERATION LENGTH	185	185	
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	105	183	122
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 8**

SD 100/CLIFF AVENUE





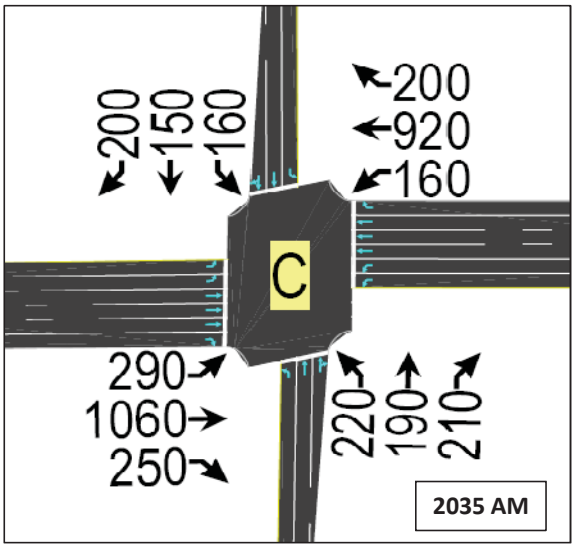


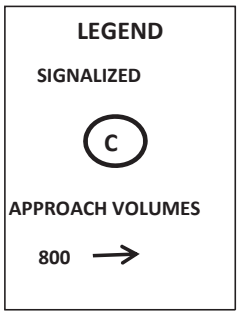
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

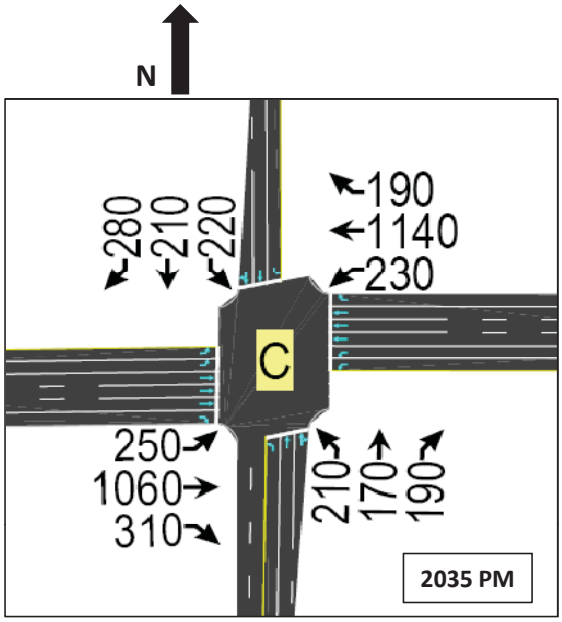
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
CLIFF SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	137	126	300
	DECELERATION LENGTH	185	185	185
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	201	176	208
	DECELERATION LENGTH	455	455	455
CLIFF NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	124	104	245
	DECELERATION LENGTH	185	185	185
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	167	148	254
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 9**

SD 100/SOUTHEASTERN AVENUE





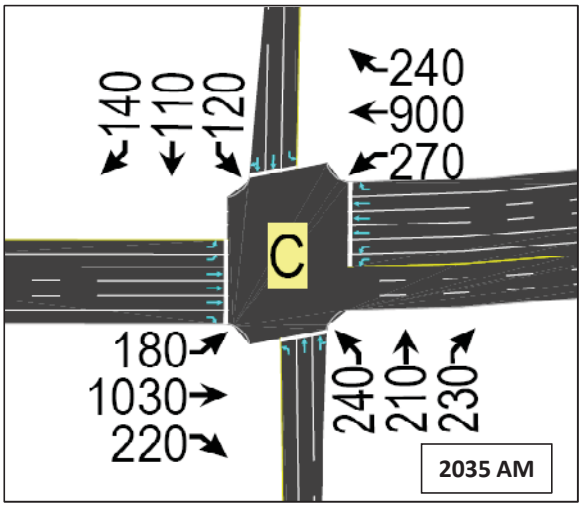


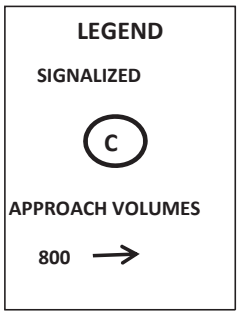
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

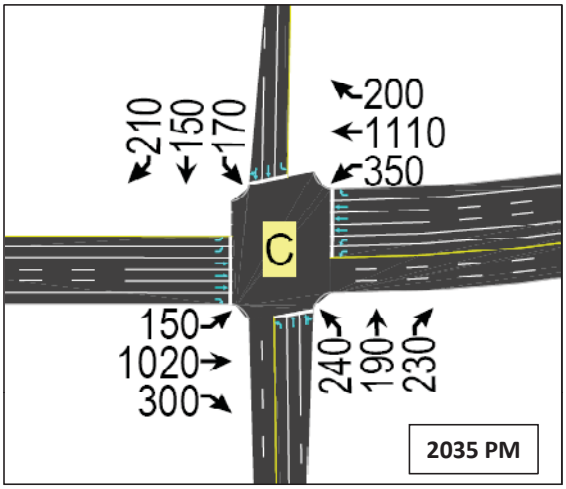
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SOUTHEASTERN SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	127	92	
	DECELERATION LENGTH	185	185	
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	110	256	41
	DECELERATION LENGTH	455	455	455
SOUTHEASTERN NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	134	67	
	DECELERATION LENGTH	185	185	
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	130	213	50
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 10**

SD 100/SYCAMORE AVENUE





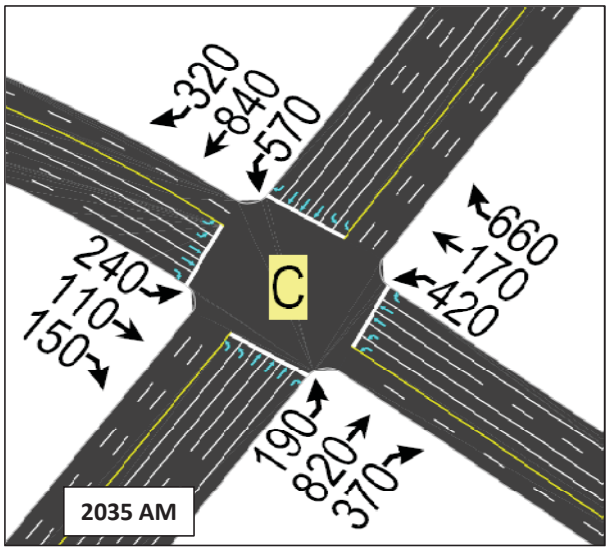


NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SYCAMORE SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	98	65	
	DECELERATION LENGTH	185	185	
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	159	203	43
	DECELERATION LENGTH	455	455	455
SYCAMORE NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	183	77	
	DECELERATION LENGTH	185	185	
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	78	198	49
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 11**

SD 100/69TH STREET



LEGEND

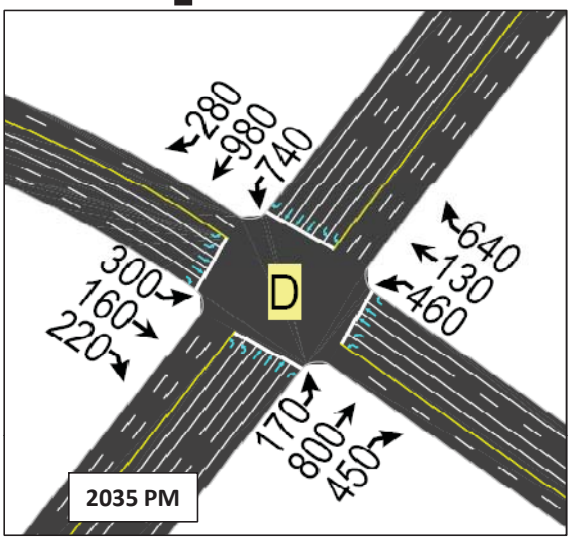
SIGNALIZED

C

APPROACH VOLUMES

800 →

N



NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	400	224	0
	DECELERATION LENGTH	455	455	455
69TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	211	79	55
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	94	268	0
	DECELERATION LENGTH	455	455	455
69TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	134	77	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 12**

SD 100/57TH STREET

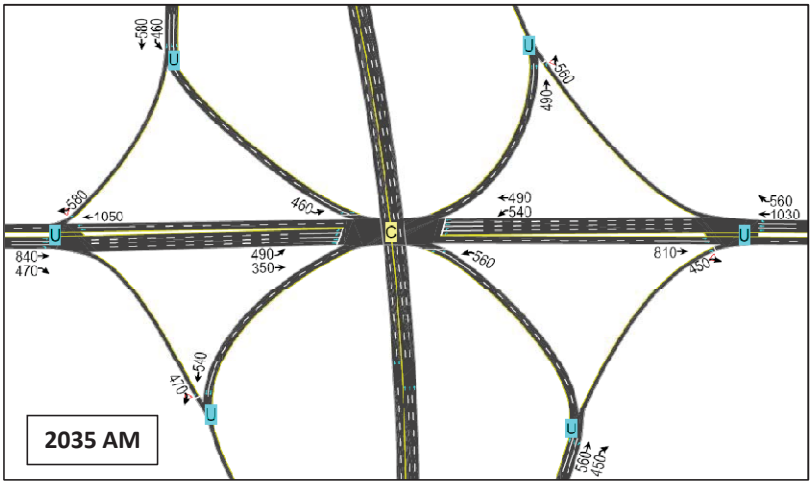
LEGEND

SIGNALIZED LEVEL OF SERVICE

C

APPROACH VOLUMES

800 →



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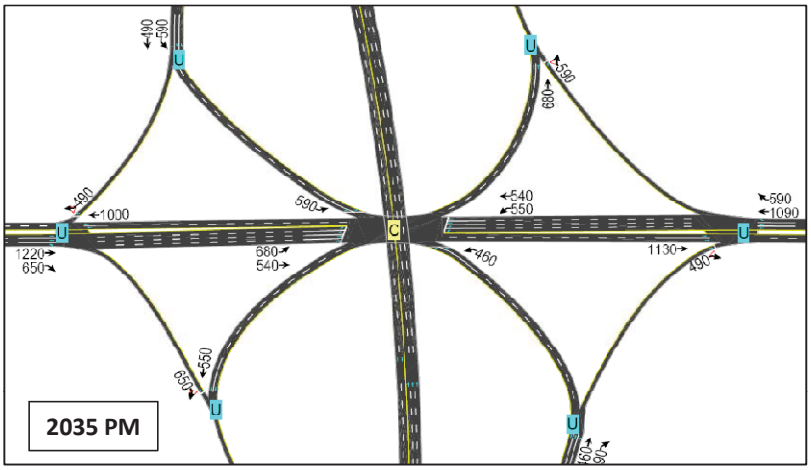
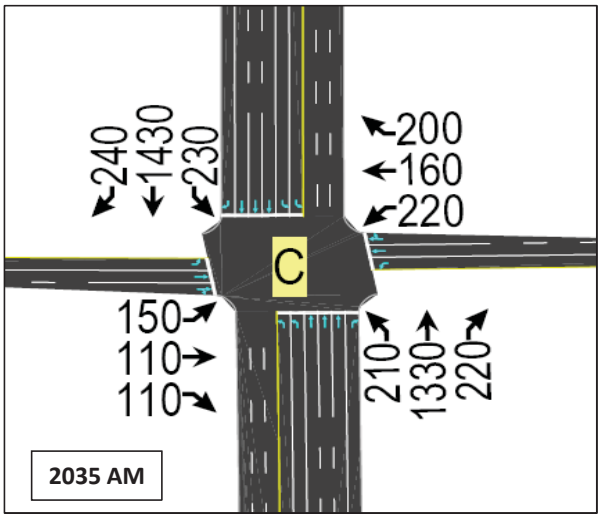


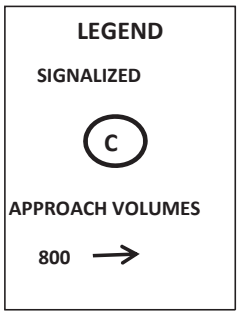
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

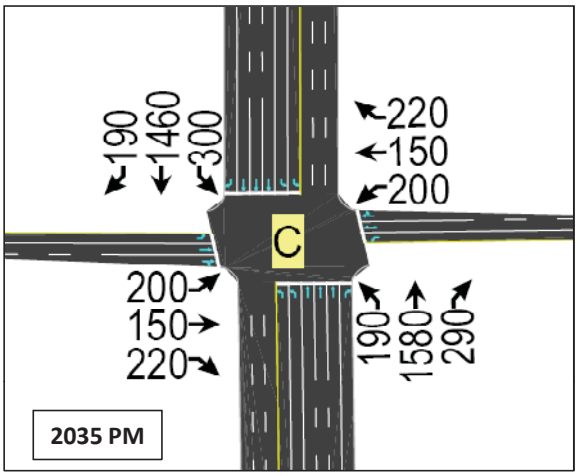
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	195		
	DECELERATION LENGTH	455		
57TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	176	148	0
	DECELERATION LENGTH	185	185	185
SD-100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	158		
	DECELERATION LENGTH	455		
57TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	230	144	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 13**

SD 100/41ST STREET





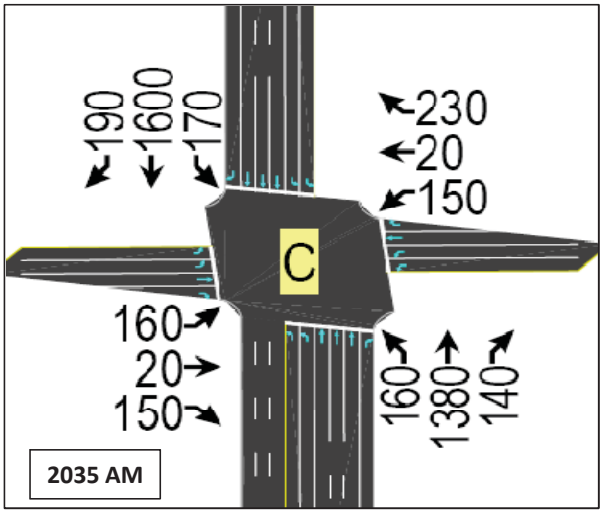


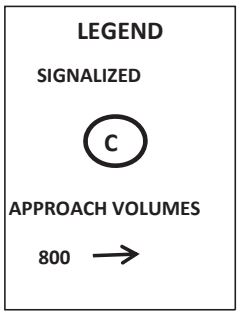
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

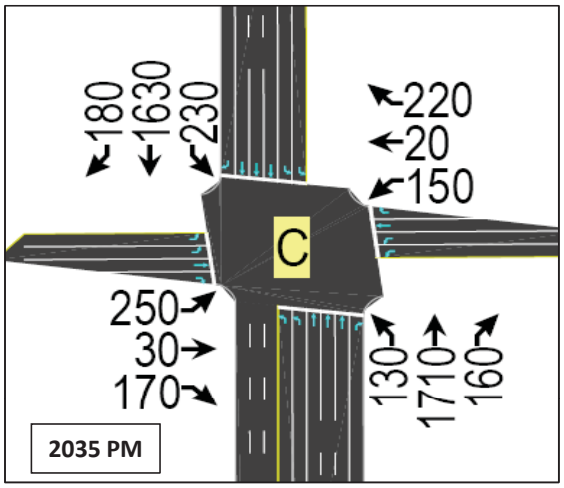
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	176	350	105
	DECELERATION LENGTH	455	455	455
41ST STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	195	110	
	DECELERATION LENGTH	185	185	
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	105	375	39
	DECELERATION LENGTH	455	455	455
41ST STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	195	109	
	DECELERATION LENGTH	185	185	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 14**

SD 100/33RD STREET





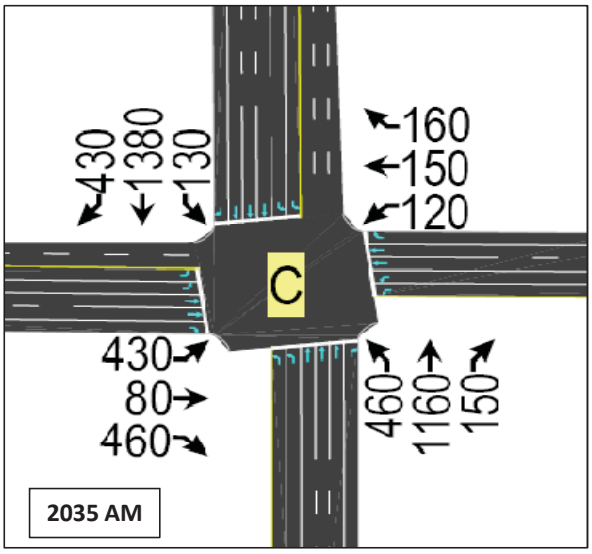


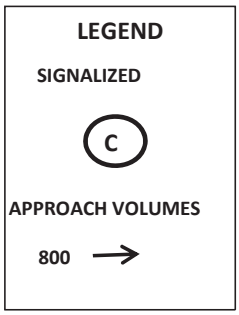
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

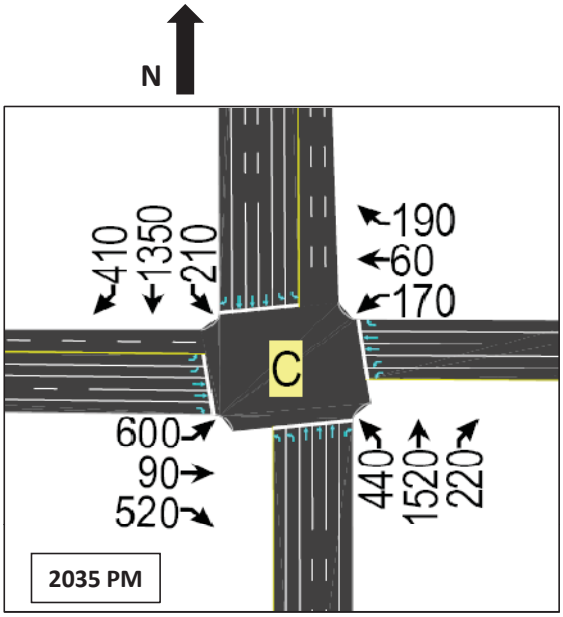
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	107	385	36
	DECELERATION LENGTH	455	455	455
33RD STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	78	34	186
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	52	395	47
	DECELERATION LENGTH	455	455	455
33RD STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	152	45	138
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 15**

SD 100/26TH STREET





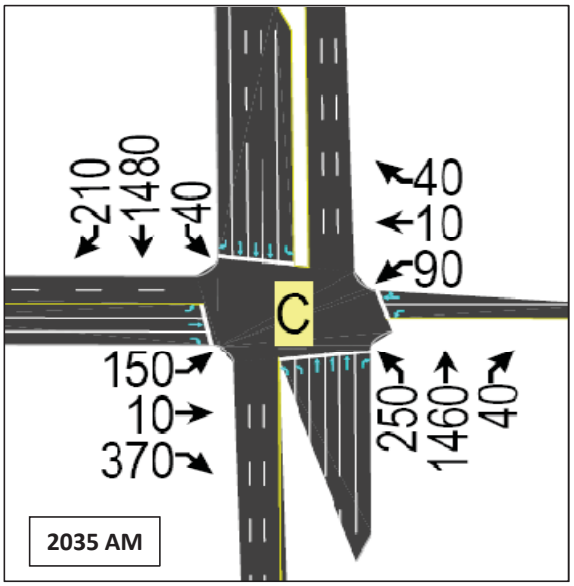


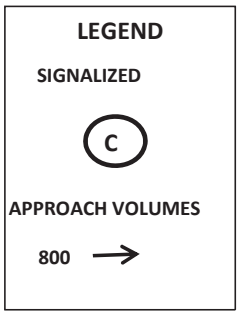
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

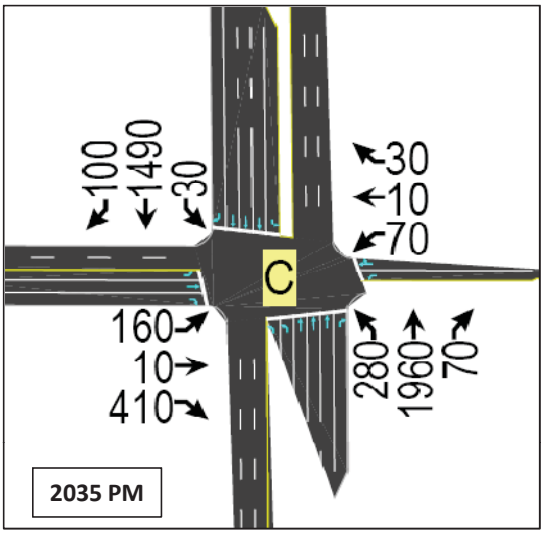
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	109	449	0
	DECELERATION LENGTH	455	455	455
26TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	95	75	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	219	432	0
	DECELERATION LENGTH	455	455	455
26TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	344	50	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 16**

SD 100/18TH STREET



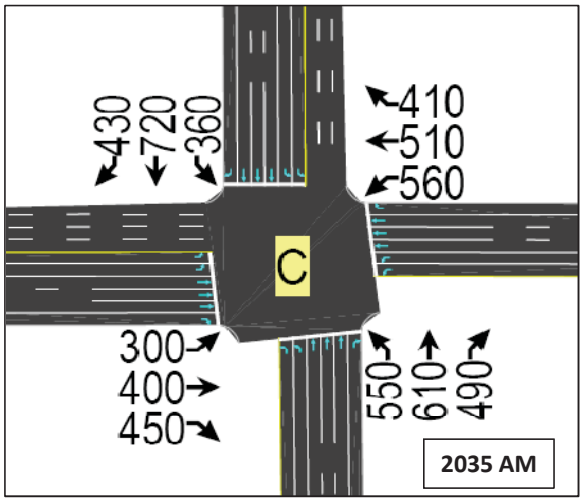


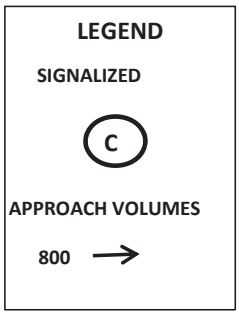


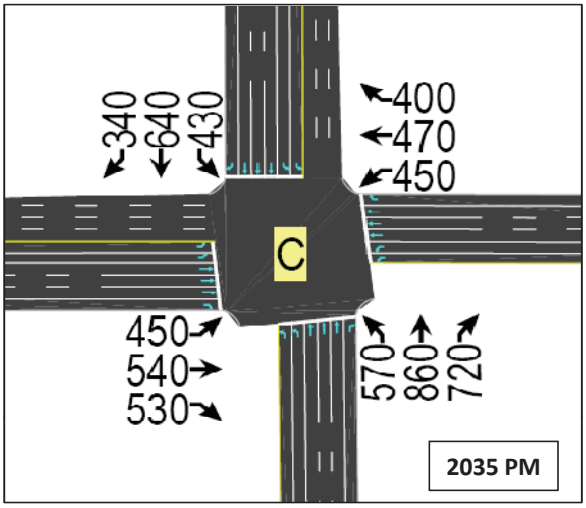
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	1
	QUEUE LENGTH	43	365	40
	DECELERATION LENGTH	455	455	455
18TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	0
	QUEUE LENGTH	69	33	
	DECELERATION LENGTH	185	185	
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	105	483	27
	DECELERATION LENGTH	455	455	455
18TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	1
	QUEUE LENGTH	133	19	338
	DECELERATION LENGTH	185	185	185

SD 100/ARROWHEAD PARKWAY





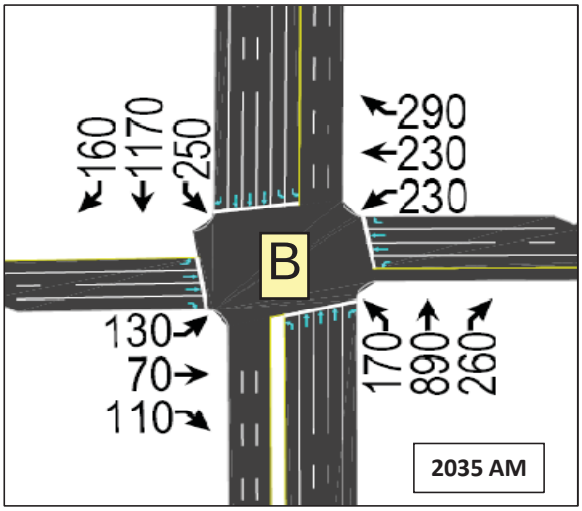


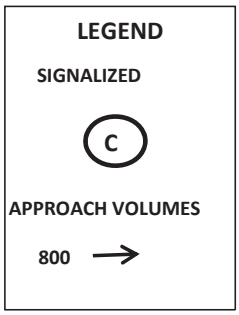
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

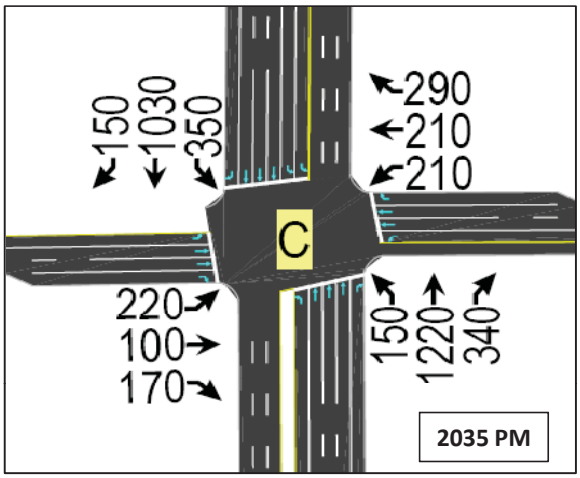
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	185	204	0
	DECELERATION LENGTH	455	455	455
ARROWHEAD WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	275	138	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	268	231	91
	DECELERATION LENGTH	455	455	455
ARROWHEAD EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	220	135	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 18**

SD 100/6TH STREET





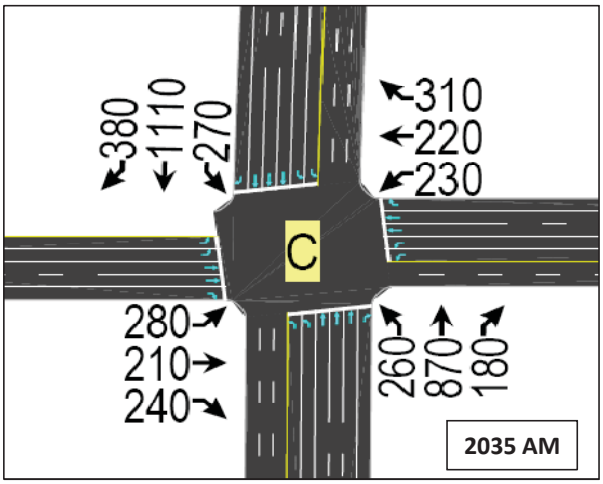


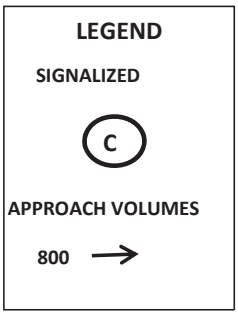
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

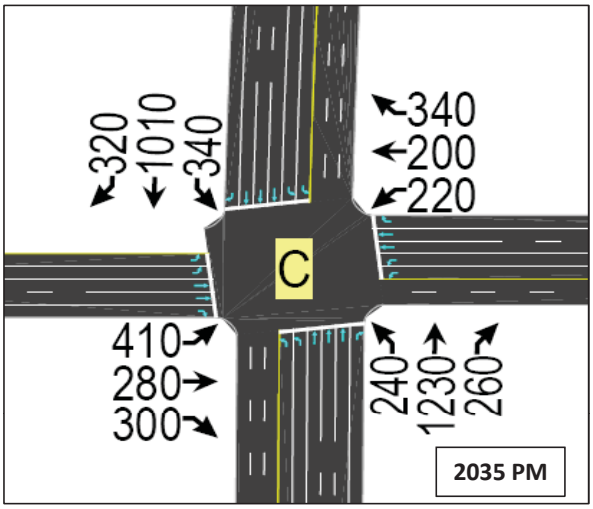
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	126	278	0
	DECELERATION LENGTH	455	455	455
6TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	1
	QUEUE LENGTH	169	75	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	1
	QUEUE LENGTH	152	257	0
	DECELERATION LENGTH	455	455	455
6TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	1
	QUEUE LENGTH	170	41	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 19**

SD 100/MADISON STREET





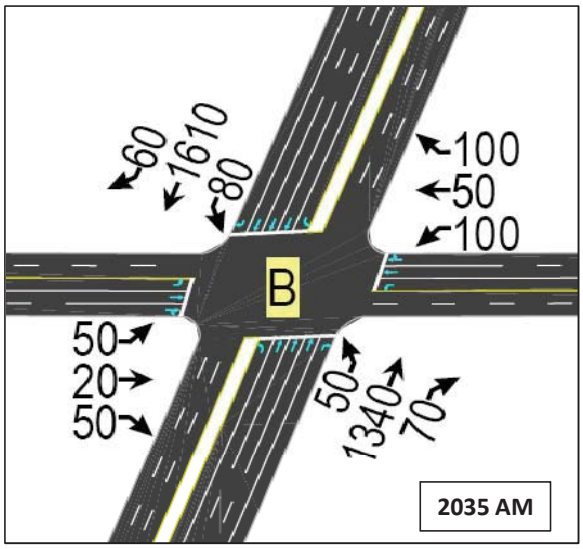


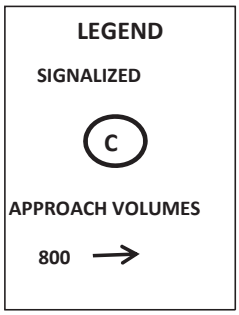
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

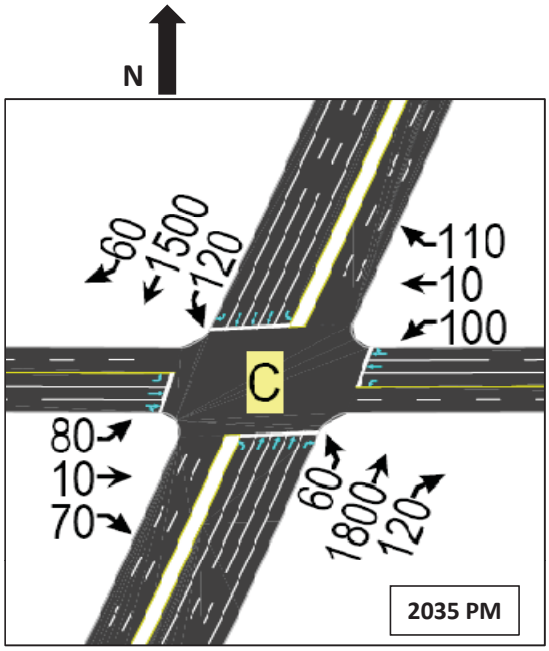
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	167	241	0
	DECELERATION LENGTH	455	455	455
MADISON STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	54	67	192
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	127	285	0
	DECELERATION LENGTH	455	455	455
MADISON STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	95	84	150
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 20**

SD 100/(COLLECTOR STREET)





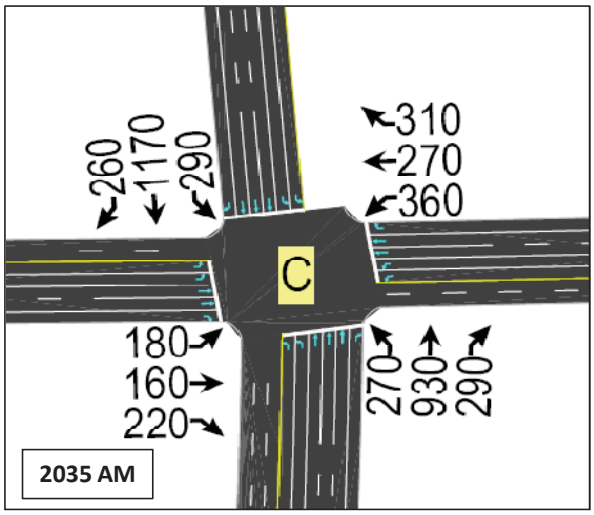


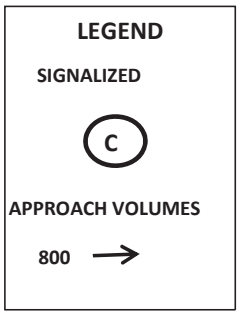
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

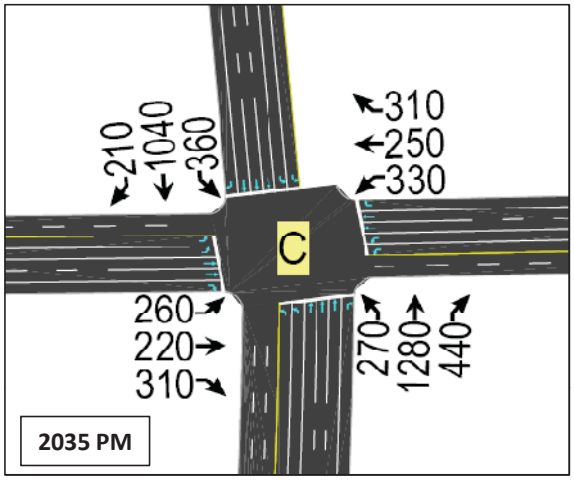
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	1
	QUEUE LENGTH	102	390	21
	DECELERATION LENGTH	455	455	455
(COLLECTOR STREET) WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	84	35	
	DECELERATION LENGTH	185	185	
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	1
	QUEUE LENGTH	62	501	31
	DECELERATION LENGTH	455	455	455
(COLLECTOR STREET) EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	69	21	
	DECELERATION LENGTH	185	185	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 21**

SD 100/MAPLE STREET







NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	163	287	0
	DECELERATION LENGTH	455	455	455
MAPLE STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	184	110	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	186	386	0
	DECELERATION LENGTH	455	455	455
MAPLE STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	150	101	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 22**

SD 100/BENSON ROAD

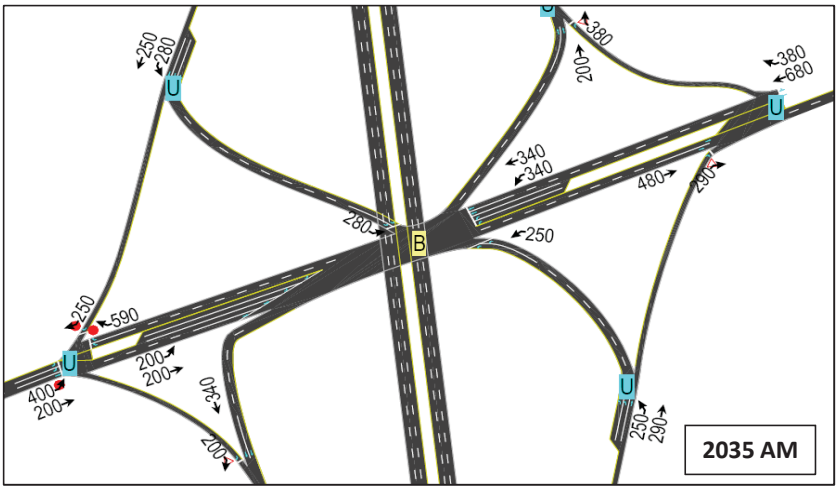
LEGEND

SIGNALIZED
LEVEL OF SERVICE

C

APPROACH VOLUMES

800 →



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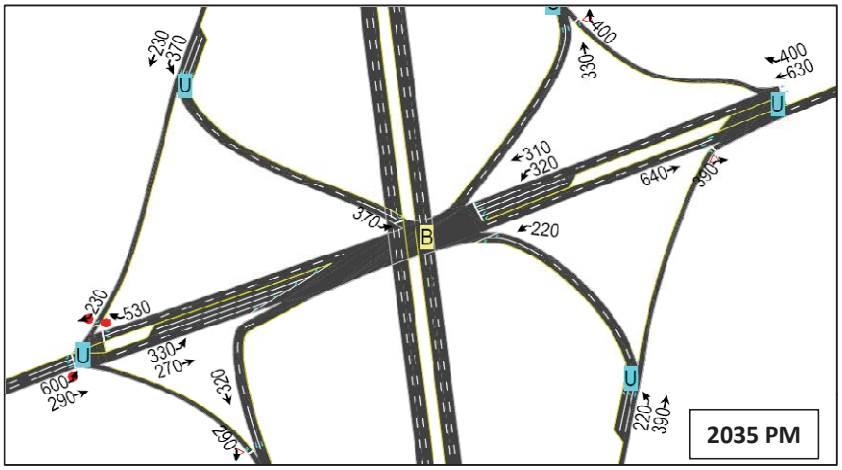
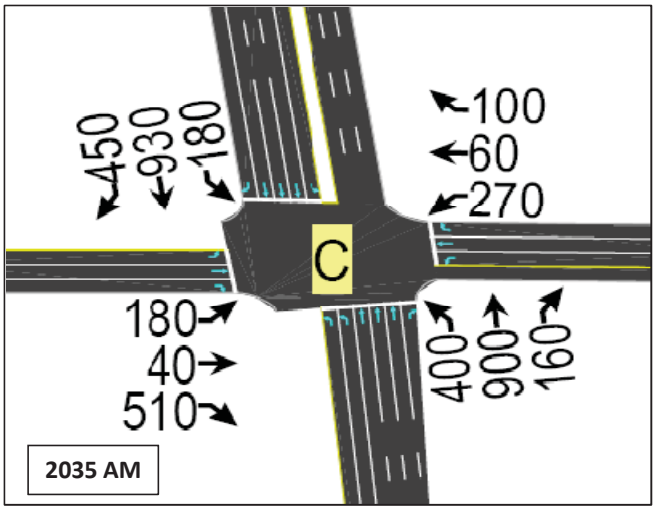


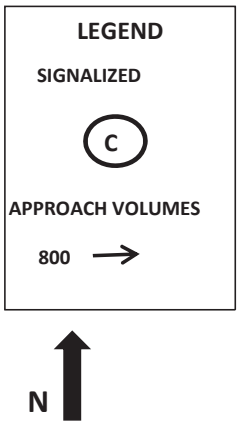
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

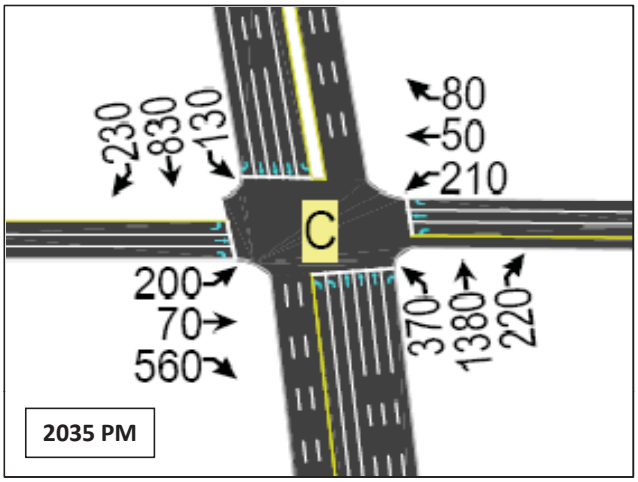
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	75		
	DECELERATION LENGTH	455		
BENSON ROAD WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	75	57	
	DECELERATION LENGTH	185	185	
SD-100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	53		
	DECELERATION LENGTH	455		
BENSON ROAD EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	70	47	
	DECELERATION LENGTH	185	185	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 23**

SD 100/60TH STREET N.



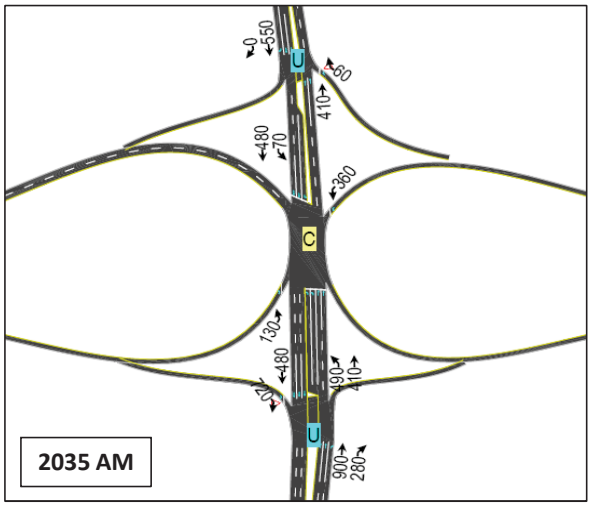




NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	1
	QUEUE LENGTH	175	272	0
	DECELERATION LENGTH	455	455	455
60TH STREET N WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	1
	QUEUE LENGTH	184	66	42
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	154	421	68
	DECELERATION LENGTH	455	455	455
6TH STREET N EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	1
	QUEUE LENGTH	149	81	0
	DECELERATION LENGTH	185	185	185

SD 100/INTERSTATE 90



LEGEND

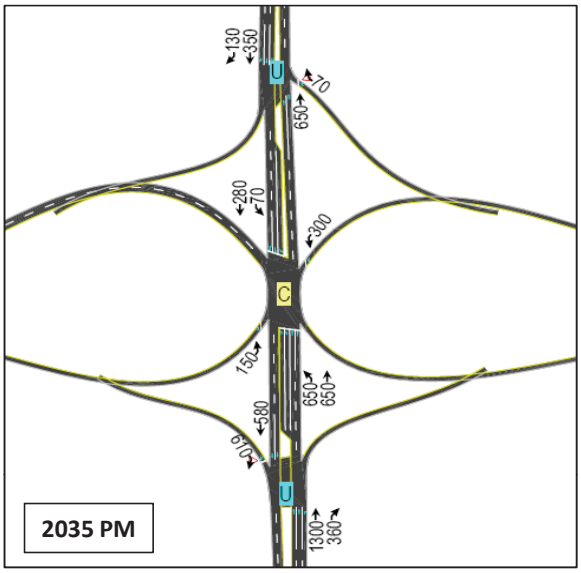
SIGNALIZED

C

APPROACH VOLUMES

800 →

N



NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	1
	QUEUE LENGTH	61	128	0
	DECELERATION LENGTH	455	455	455
I-90 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	0	1
	QUEUE LENGTH	273		0
	DECELERATION LENGTH	185		185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	241	155	0
	DECELERATION LENGTH	455	455	455
I-90 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	0	1
	QUEUE LENGTH	95		0
	DECELERATION LENGTH	185		185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 25**

I-29/SD 100 (TEA INTERCHANGE)

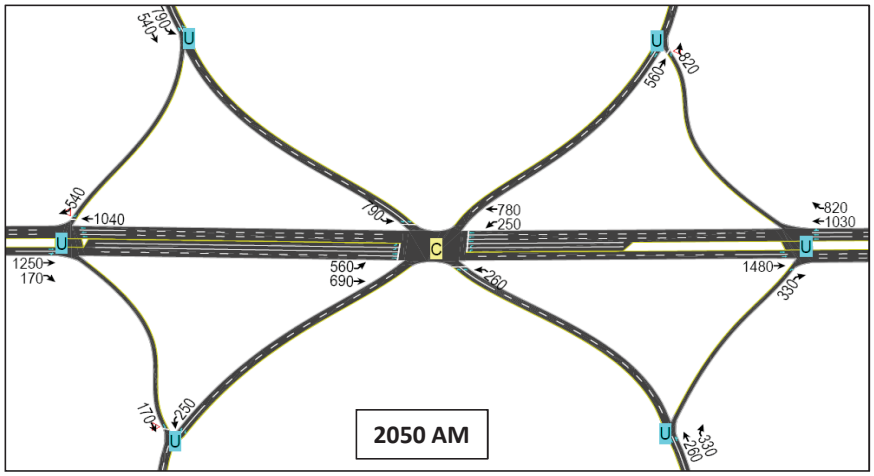
LEGEND

SIGNALIZED LEVEL OF SERVICE

C

APPROACH VOLUMES

800 →



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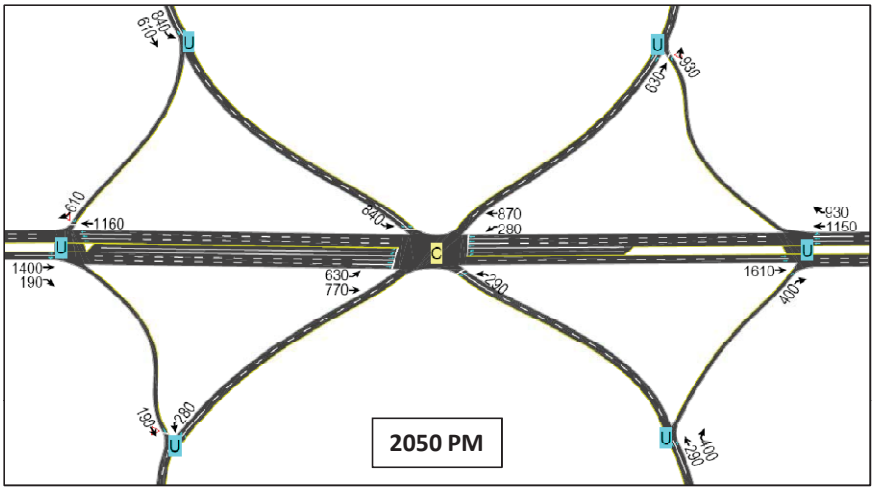
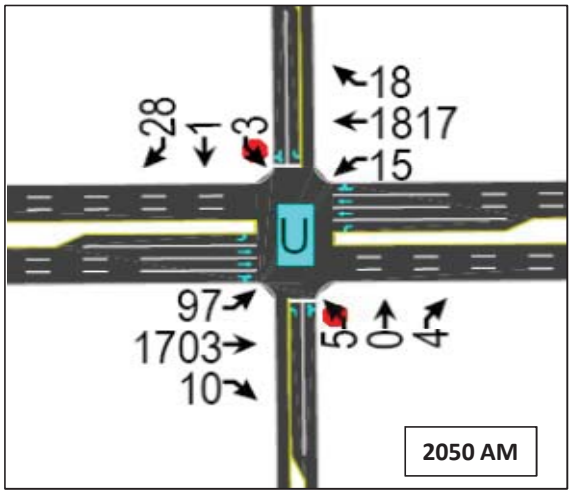


NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
I-29 SOUTHBOUND	**NORTH APPROACH**	**LEFT-TURN LANES**	**THRU LANES**	**RIGHT-TURN LANES**
	(NUMBER OF LANES)	2	0	1
	QUEUE LENGTH	320		
	DECELERATION LENGTH	185		
SD 100 WESTBOUND	**EAST APPROACH**	**LEFT-TURN LANES**	**THRU LANES**	**RIGHT-TURN LANES**
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	108	192	
	DECELERATION LENGTH	455	455	
I-29 NORTHBOUND	**SOUTH APPROACH**	**LEFT-TURN LANES**	**THRU LANES**	**RIGHT-TURN LANES**
	(NUMBER OF LANES)	2	0	1
	QUEUE LENGTH	89		
	DECELERATION LENGTH	185		
SD 100 EASTBOUND	**WEST APPROACH**	**LEFT-TURN LANES**	**THRU LANES**	**RIGHT-TURN LANES**
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	258	185	
	DECELERATION LENGTH	455	455	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 26**

SD 100/ALBERS AVENUE

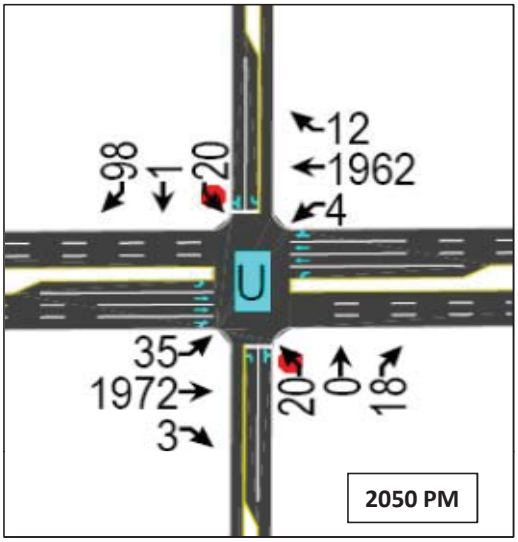


LEGEND

APPROACH VOLUMES

800 →

N

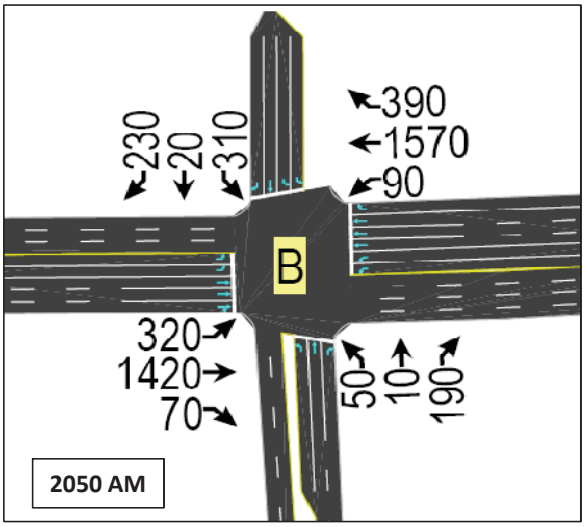


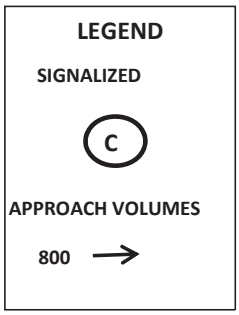
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 30 mph.

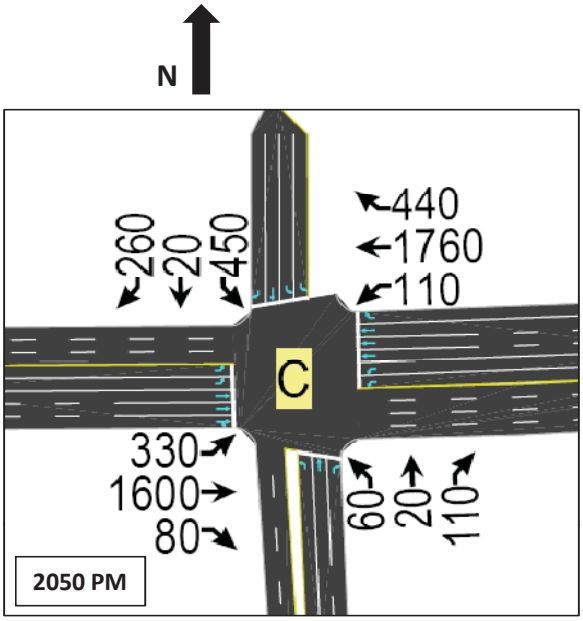
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
ALBERS SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	0
	QUEUE LENGTH	92	289	
	DECELERATION LENGTH	110	110	
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	0
	QUEUE LENGTH	5	0	
	DECELERATION LENGTH	455	455	
ALBERS NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	0
	QUEUE LENGTH	X	5	
	DECELERATION LENGTH	110	110	
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	3	0
	QUEUE LENGTH	24	0	
	DECELERATION LENGTH	455	455	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 26a**

SD 100/TALLGRASS AVENUE





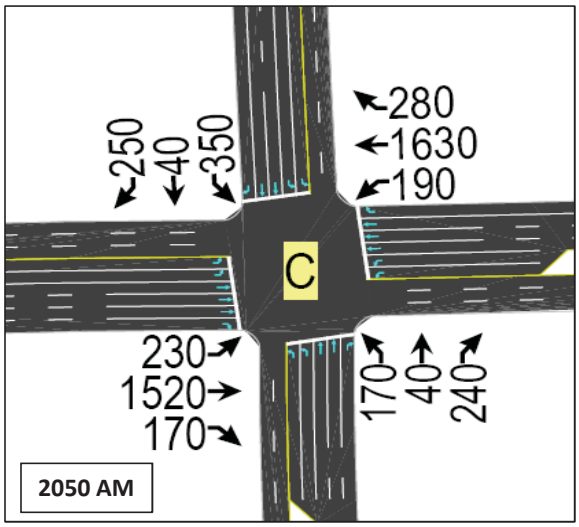


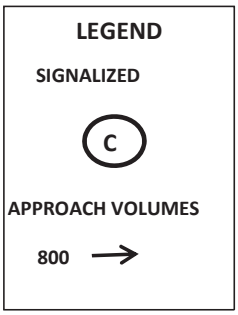
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

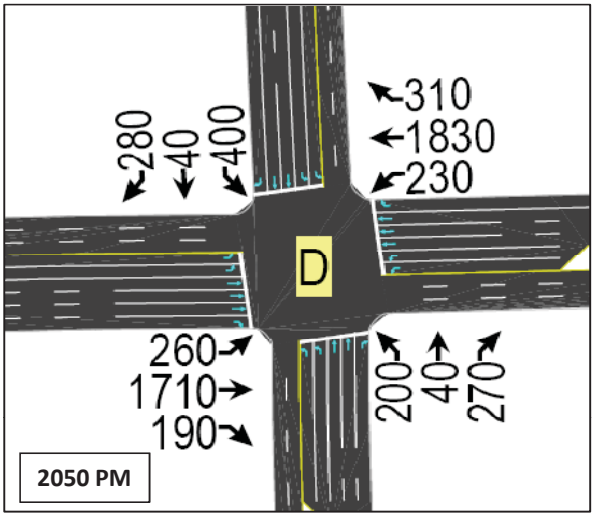
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
TALLGRASS SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	276	36	0
	DECELERATION LENGTH	185	185	185
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	64	578	0
	DECELERATION LENGTH	455	455	185
TALLGRASS NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	1	1
	QUEUE LENGTH	83	38	0
	DECELERATION LENGTH	185	185	185
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	0
	QUEUE LENGTH	157	438	
	DECELERATION LENGTH	455	455	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 27**

SD 100/LOUISE AVENUE





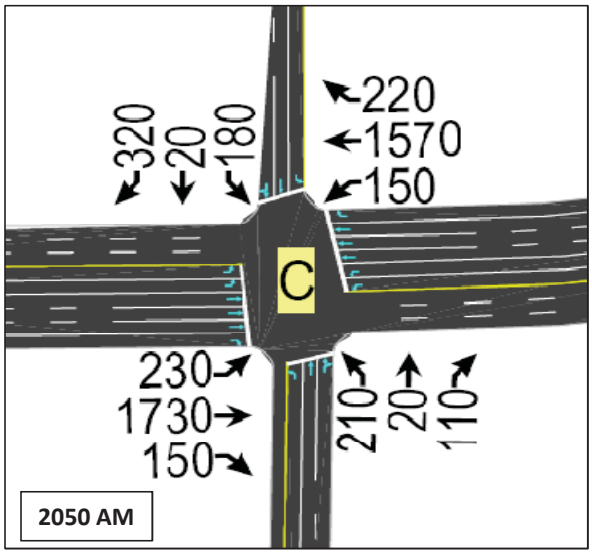


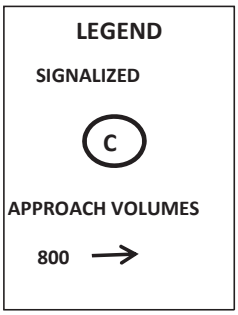
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

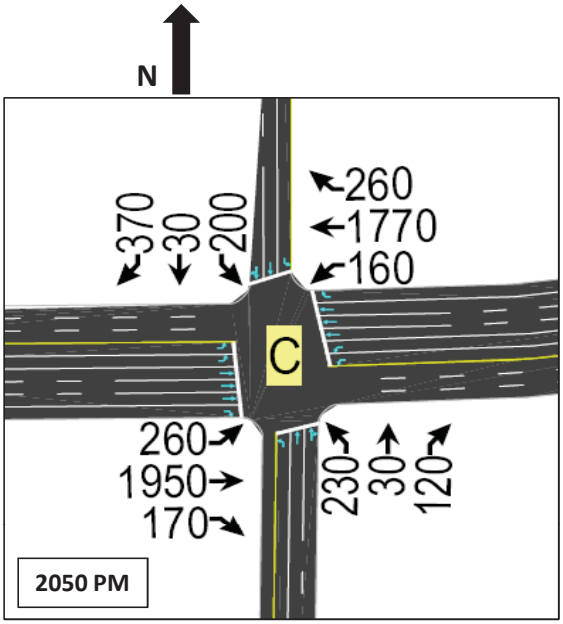
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
LOUISE SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	233	25	0
	DECELERATION LENGTH	185	185	185
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	111	519	0
	DECELERATION LENGTH	455	455	455
LOUISE NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	98	25	0
	DECELERATION LENGTH	185	185	185
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	168	480	0
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 28**

SD 100/WESTERN AVENUE



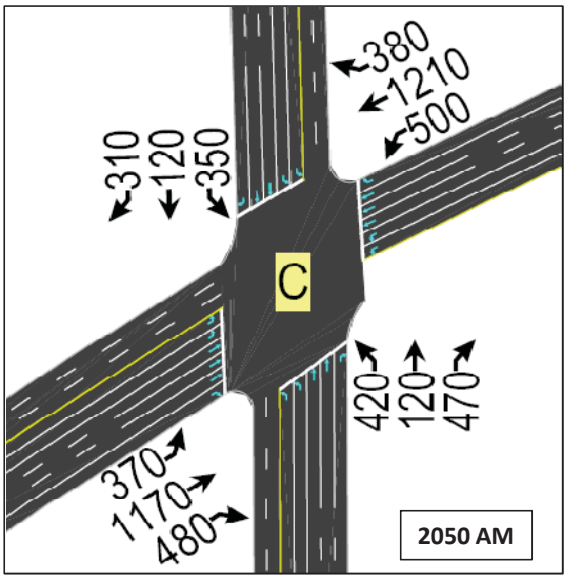


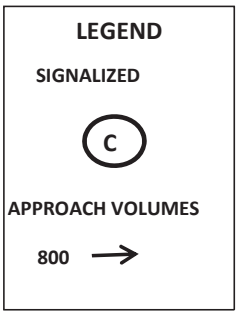


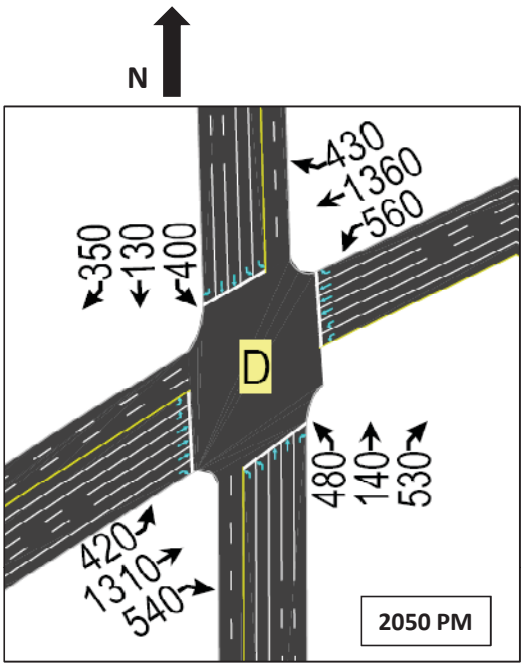
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
WESTERN SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	159	138	
	DECELERATION LENGTH	185	185	
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	94	393	39
	DECELERATION LENGTH	455	455	455
WESTERN NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	0
	QUEUE LENGTH	238	33	
	DECELERATION LENGTH	185	185	
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	132	530	32
	DECELERATION LENGTH	455	455	455

SD 100/MINNESOTA AVENUE





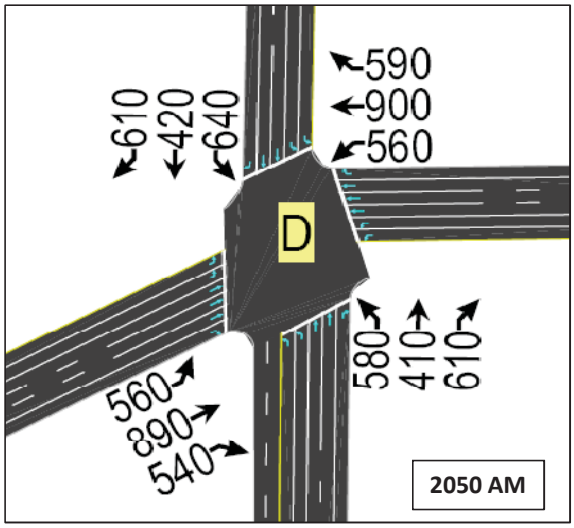


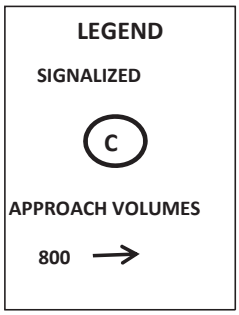
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

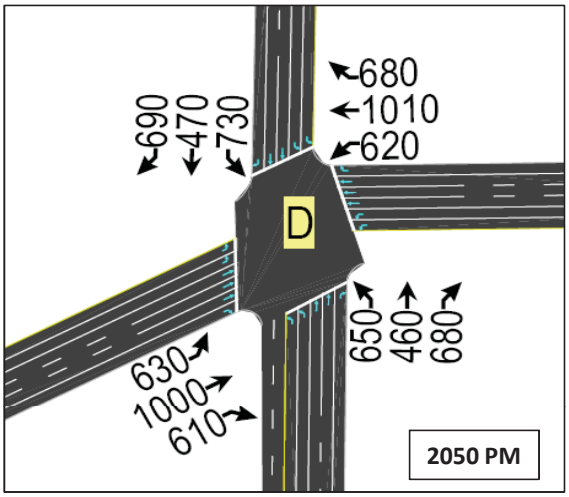
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
MINNESOTA SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	222	63	0
	DECELERATION LENGTH	185	185	185
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	308	413	0
	DECELERATION LENGTH	455	455	455
MINNESOTA NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	271	65	0
	DECELERATION LENGTH	185	185	185
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	171	354	0
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 30**

SD 100/CLIFF AVENUE





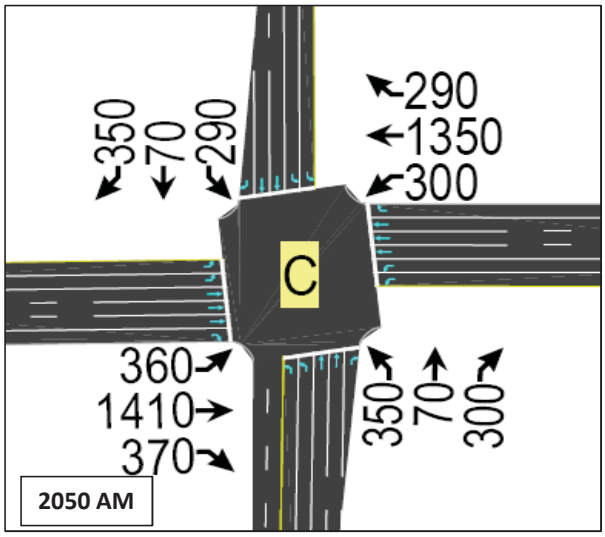


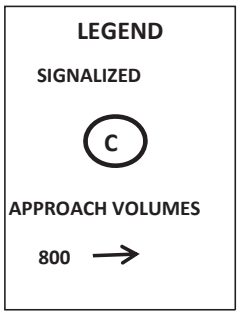
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

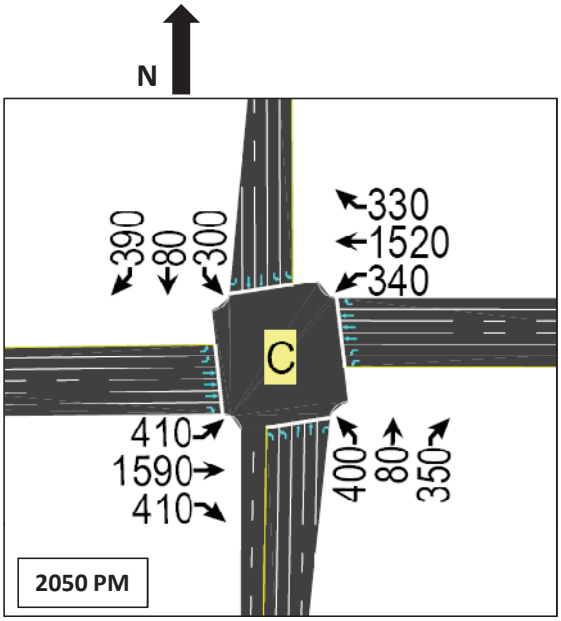
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
CLIFF SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	432	287	0
	DECELERATION LENGTH	185	185	185
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	379	401	0
	DECELERATION LENGTH	455	455	455
CLIFF NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	373	290	0
	DECELERATION LENGTH	185	185	185
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	377	382	0
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 31**

SD 100/SOUTHEASTERN AVENUE





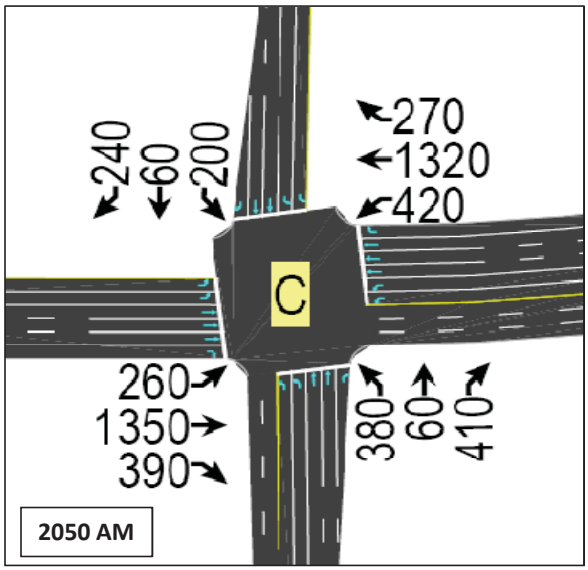


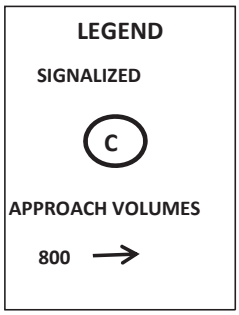
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

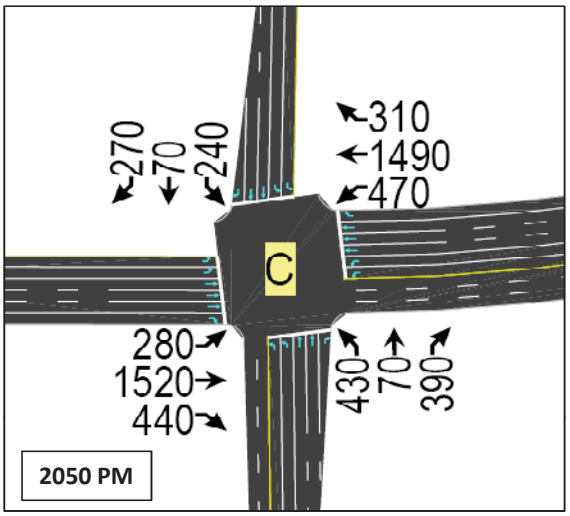
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SOUTHEASTERN SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	129	43	0
	DECELERATION LENGTH	185	185	185
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	185	375	48
	DECELERATION LENGTH	455	455	455
SOUTHEASTERN NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	206	43	0
	DECELERATION LENGTH	185	185	185
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	213	371	49
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 32**

SD 100/SYCAMORE AVENUE





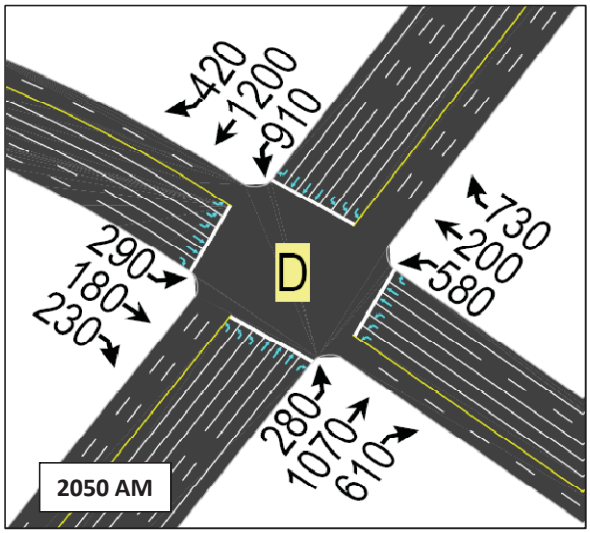


NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SYCAMORE SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	104	40	0
	DECELERATION LENGTH	185	185	185
SD 100 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	235	330	44
	DECELERATION LENGTH	455	455	455
SYCAMORE NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	219	40	0
	DECELERATION LENGTH	185	185	185
SD 100 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	155	421	56
	DECELERATION LENGTH	455	455	455

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 33**

SD 100/69TH STREET



LEGEND

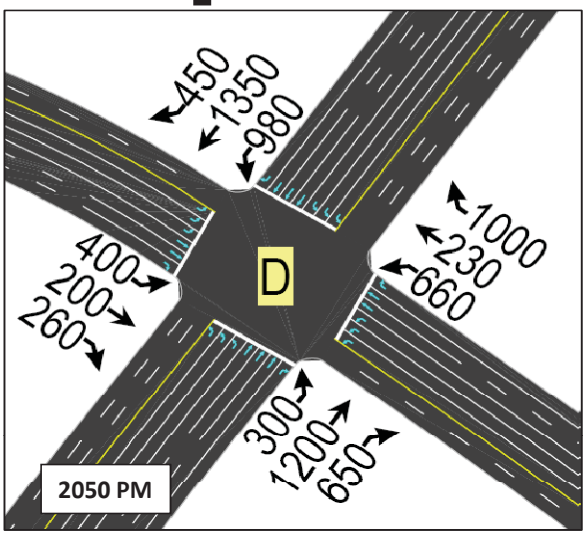
SIGNALIZED

C

APPROACH VOLUMES

800 →

N



NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	364	320	0
	DECELERATION LENGTH	455	455	455
69TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	2	1
	QUEUE LENGTH	241	114	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	120	449	0
	DECELERATION LENGTH	455	455	455
69TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	2	1
	QUEUE LENGTH	127	101	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 34**

SD 100/57TH STREET

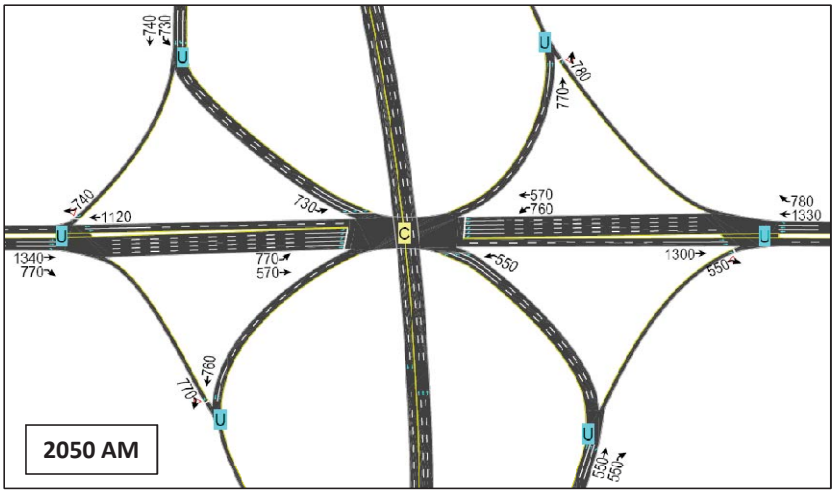
LEGEND

SIGNALIZED LEVEL OF SERVICE

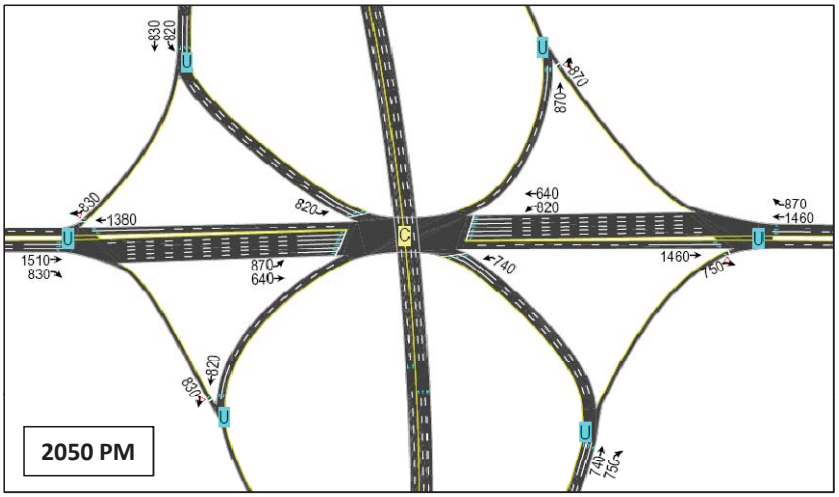
C

APPROACH VOLUMES

800 →



N

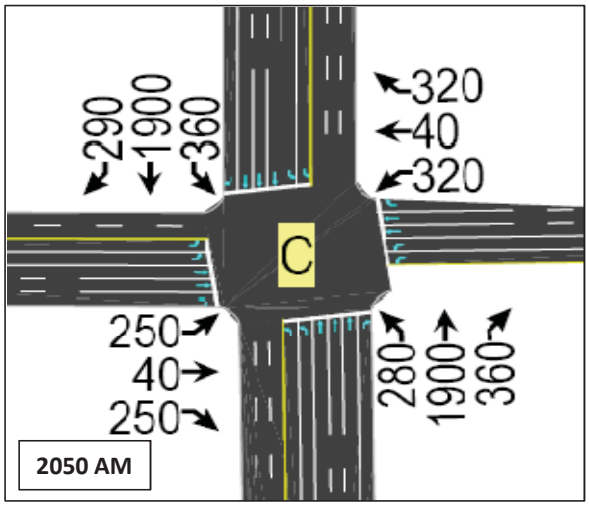


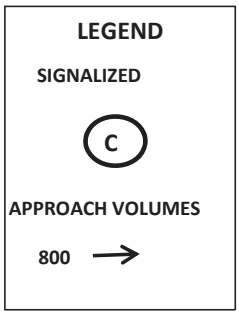
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

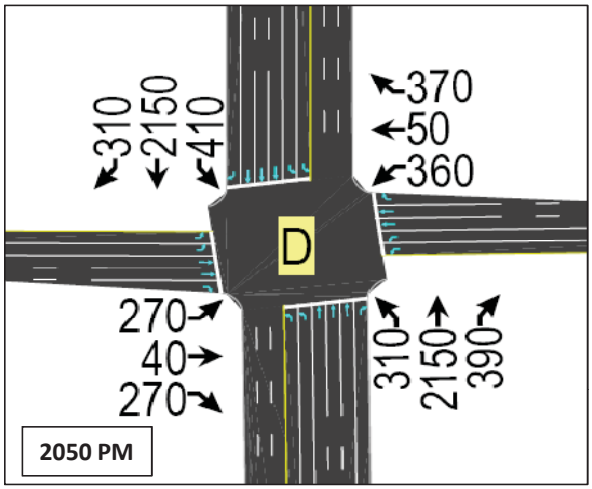
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	146		
	DECELERATION LENGTH	455		
57TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	154	139	0
	DECELERATION LENGTH	185	185	185
SD-100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	130		
	DECELERATION LENGTH	455		
57TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	180	139	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 35**

SD 100/41ST STREET





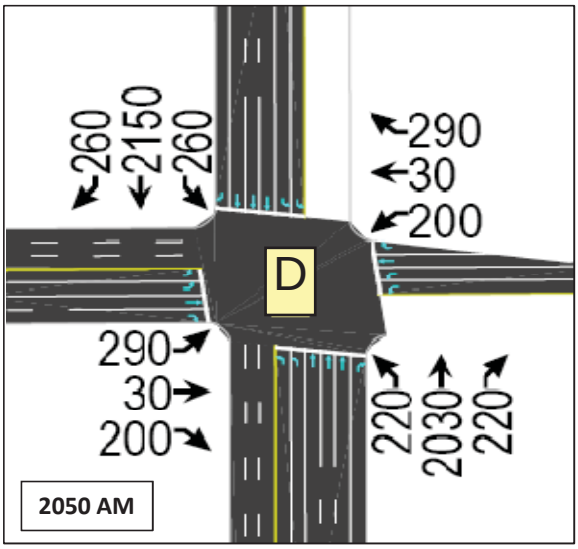


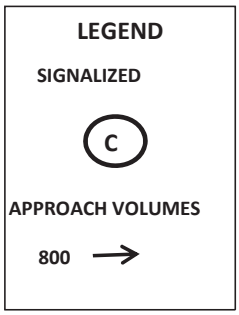
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

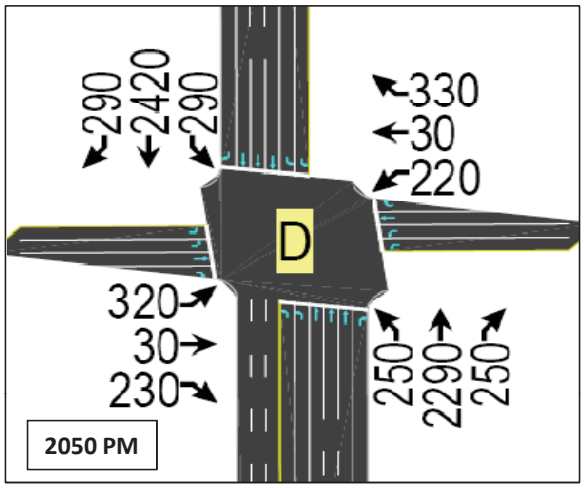
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	194	712	0
	DECELERATION LENGTH	455	455	455
41ST STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	280	43	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	160	795	0
	DECELERATION LENGTH	455	455	455
41ST STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	184	36	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 36**

SD 100/33RD STREET





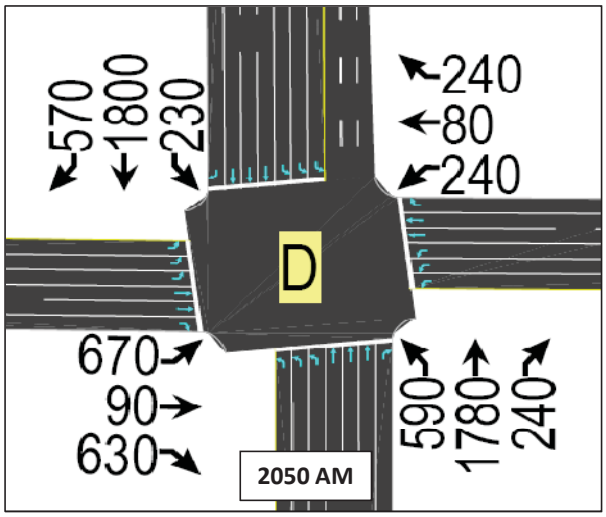


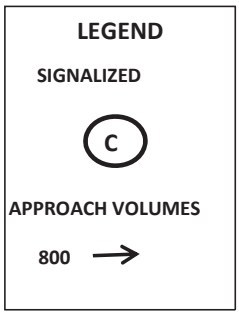
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

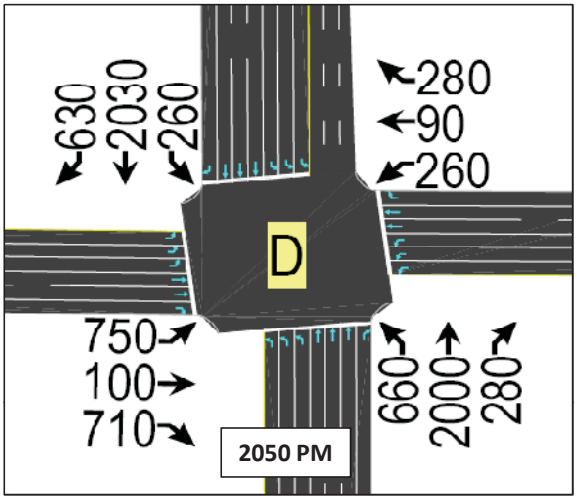
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	132	536	85
	DECELERATION LENGTH	455	455	455
33RD STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	156	57	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	118	422	51
	DECELERATION LENGTH	455	455	455
33RD STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	262	57	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 37**

SD 100/26TH STREET





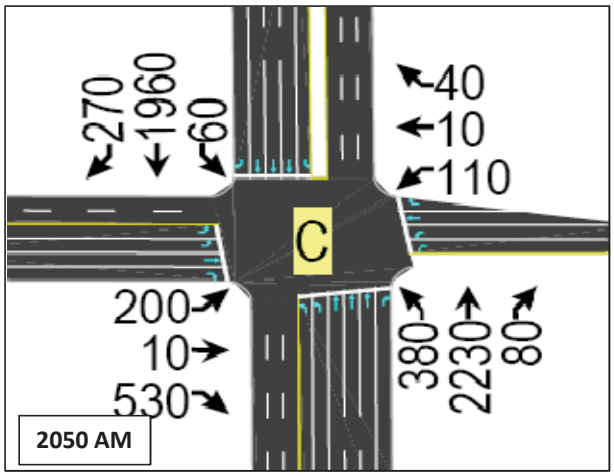


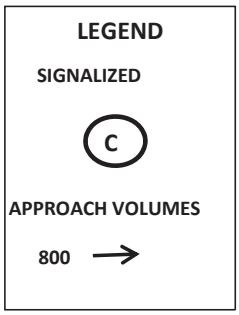
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

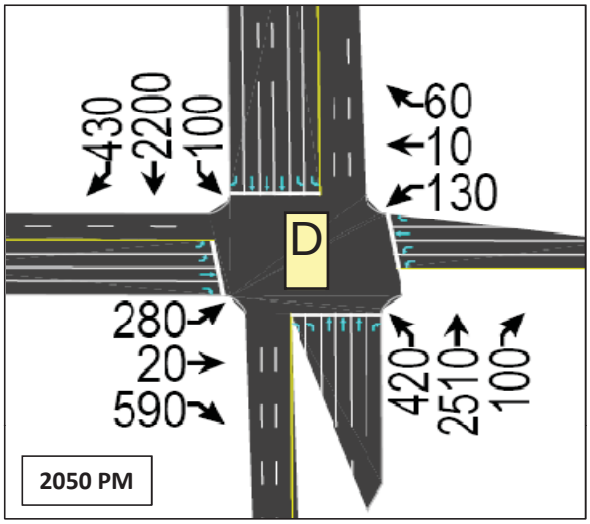
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	108	819	0
	DECELERATION LENGTH	455	455	455
26TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	2	1
	QUEUE LENGTH	108	66	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	206	600	0
	DECELERATION LENGTH	455	455	455
26TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	2	1
	QUEUE LENGTH	353	74	12
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 38**

SD 100/18TH STREET



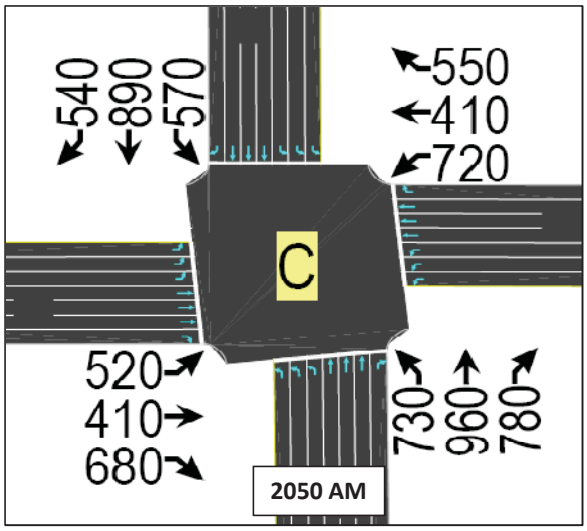


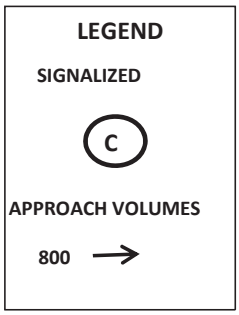


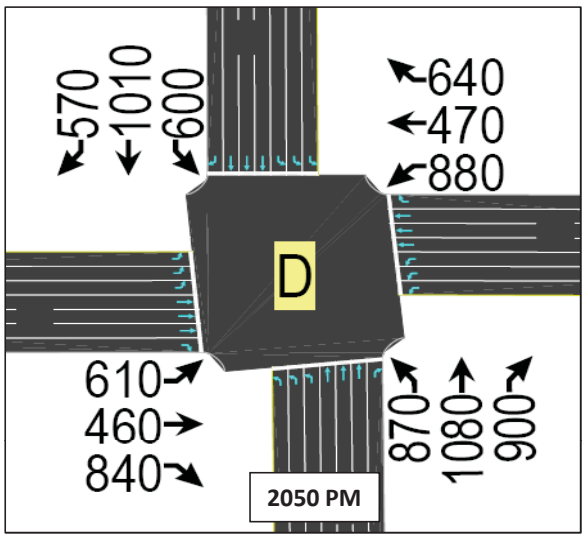
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	73	795	0
	DECELERATION LENGTH	455	455	455
18TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	84	25	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	213	856	0
	DECELERATION LENGTH	455	455	455
18TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	212	41	0
	DECELERATION LENGTH	185	185	185

SD 100/ARROWHEAD PARKWAY





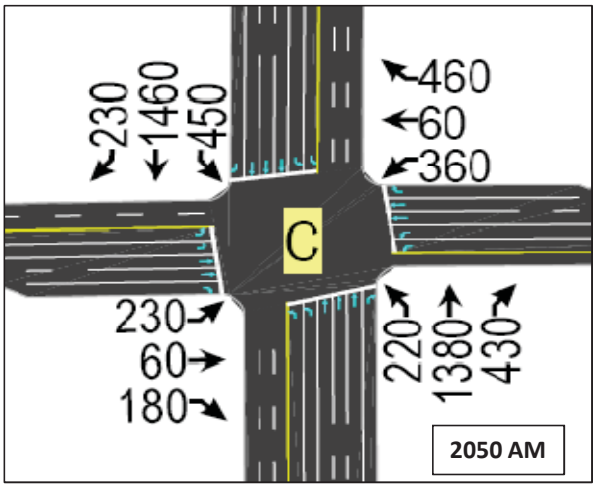


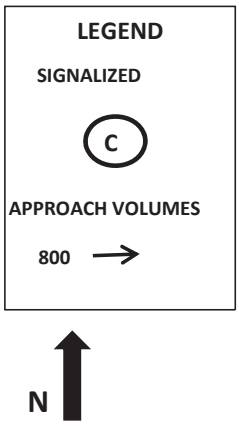
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

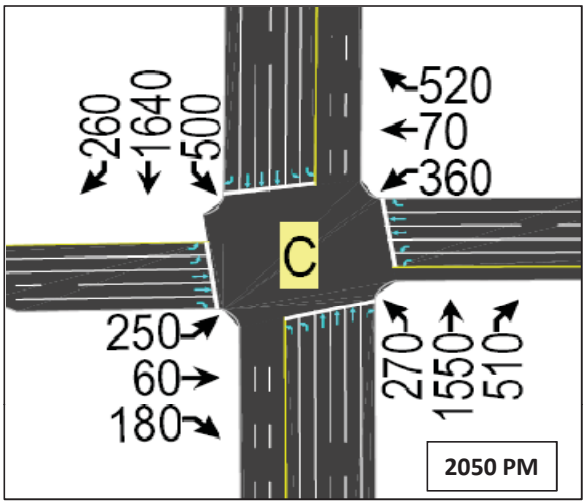
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	175	330	0
	DECELERATION LENGTH	455	455	455
ARROWHEAD WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	295	135	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	290	319	0
	DECELERATION LENGTH	455	455	455
ARROWHEAD EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	3	3	1
	QUEUE LENGTH	168	132	398
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 40**

SD 100/6TH STREET



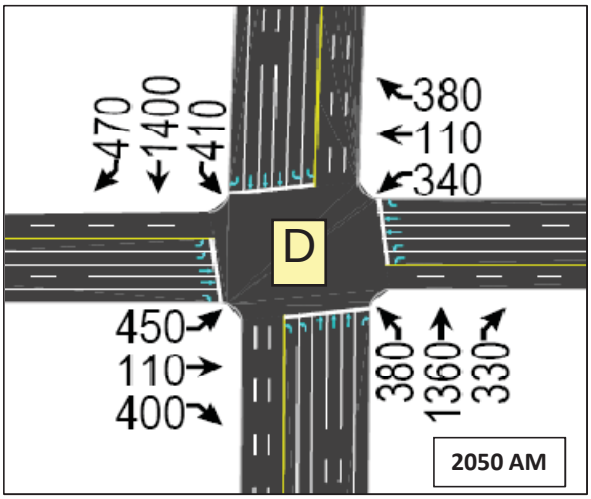


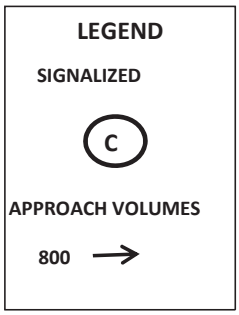


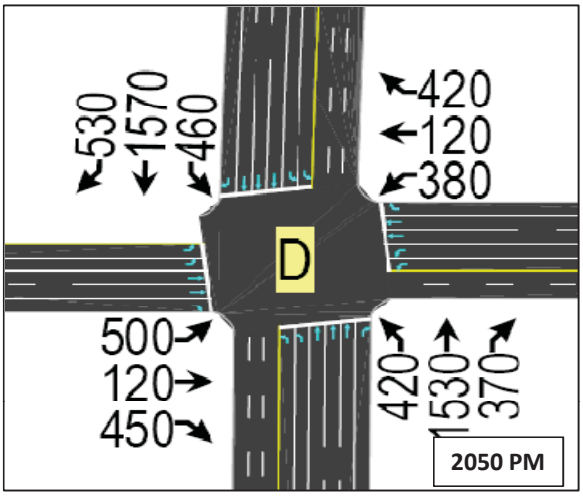
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	204	457	0
	DECELERATION LENGTH	455	455	455
6TH STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	213	42	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	120	483	0
	DECELERATION LENGTH	455	455	455
6TH STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	137	38	0
	DECELERATION LENGTH	185	185	185

SD 100/MADISON STREET





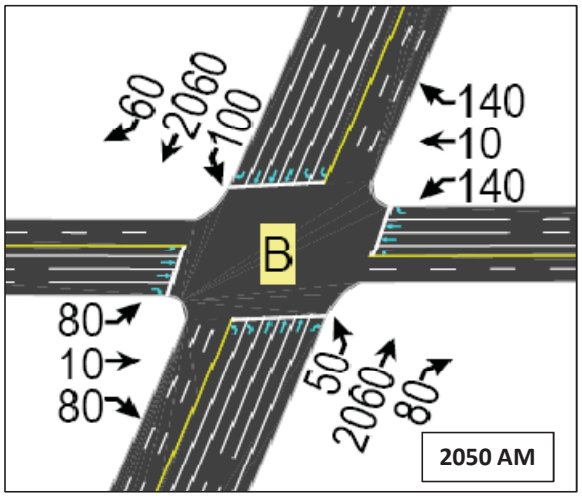


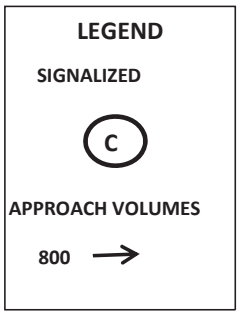
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

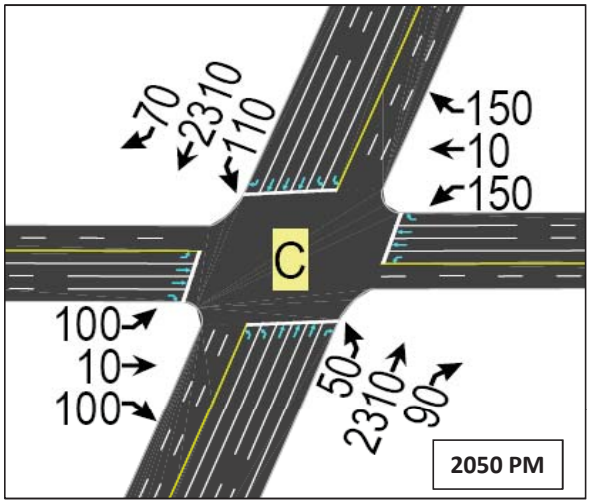
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	272	546	0
	DECELERATION LENGTH	455	455	455
MADISON STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	218	76	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	250	545	0
	DECELERATION LENGTH	455	455	455
MADISON STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	323	75	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 42**

SD 100/(COLLECTOR STREET)





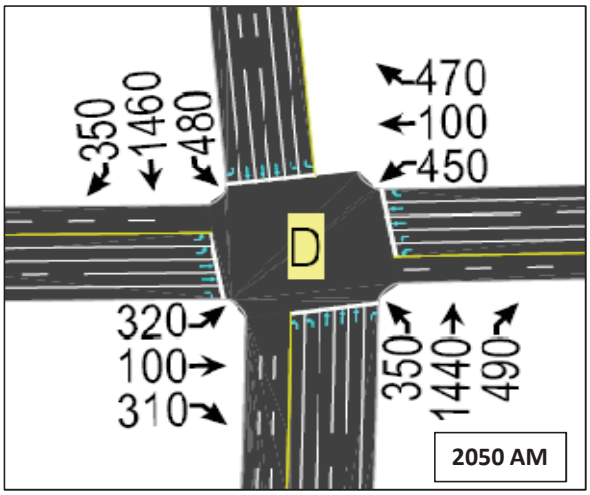


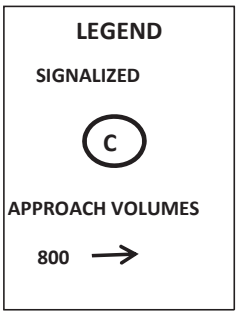
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

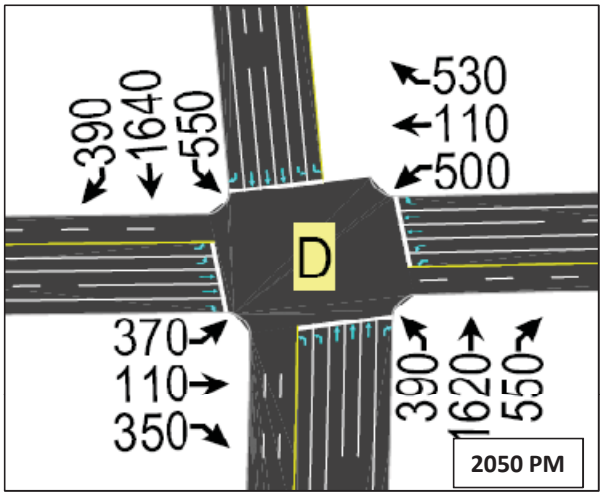
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	58	632	17
	DECELERATION LENGTH	455	455	455
(COLLECTOR STREET) WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	1
	QUEUE LENGTH	176	11	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	33	663	21
	DECELERATION LENGTH	455	455	455
(COLLECTOR STREET) EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	1
	QUEUE LENGTH	105	11	0
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 43**

SD 100/MAPLE STREET







NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	310	456	0
	DECELERATION LENGTH	455	455	455
MAPLE STREET WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	361	83	0
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	244	644	0
	DECELERATION LENGTH	455	455	455
MAPLE STREET EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	242	68	4
	DECELERATION LENGTH	185	185	185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 44**

SD 100/BENSON ROAD

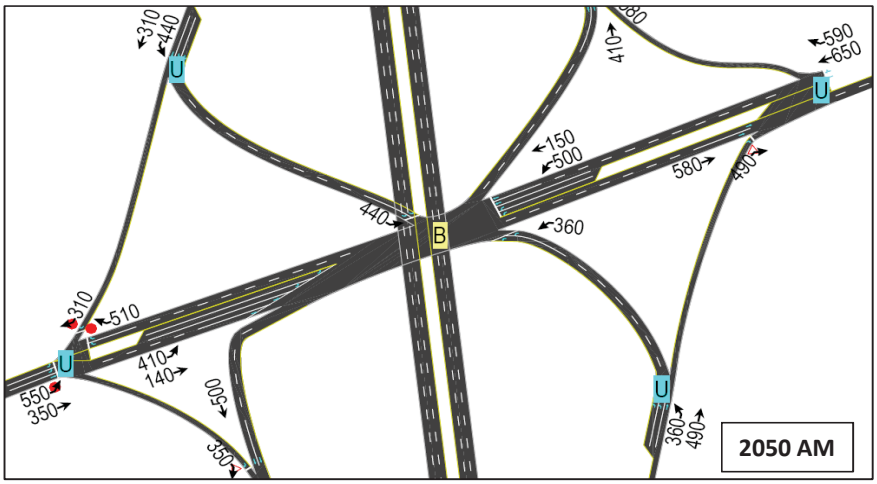
LEGEND

SIGNALIZED LEVEL OF SERVICE

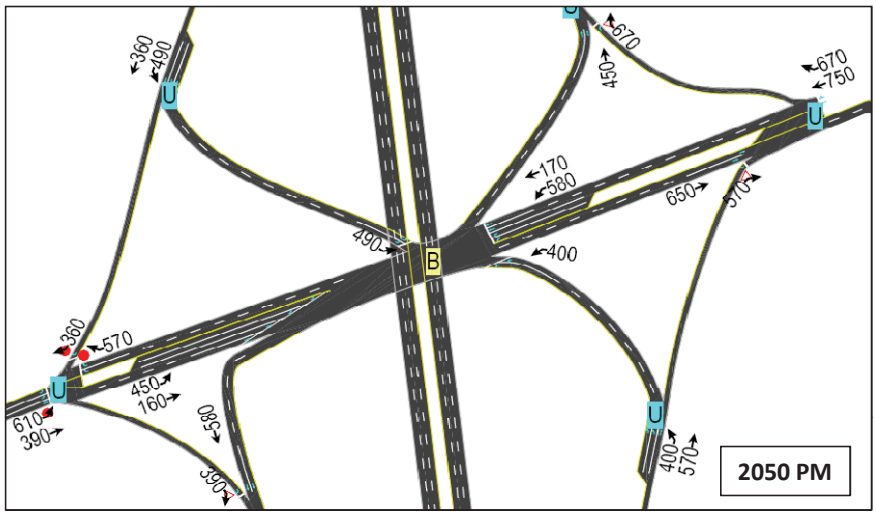
C

APPROACH VOLUMES

800 →



N

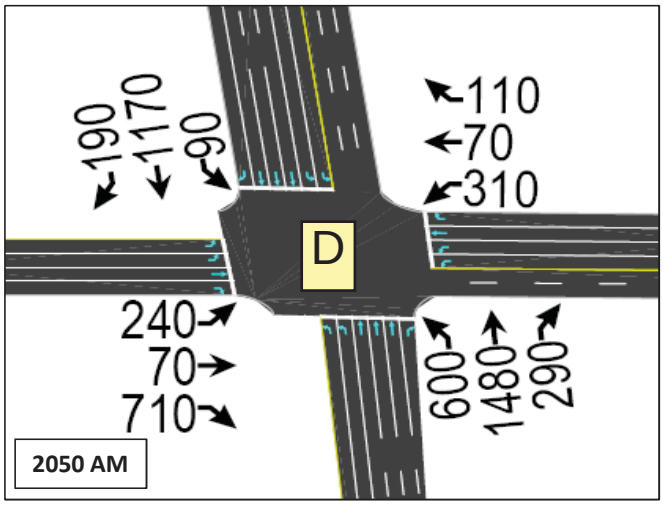


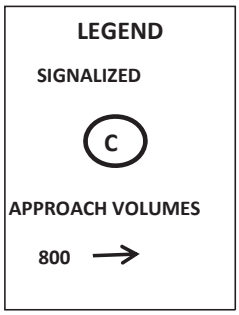
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

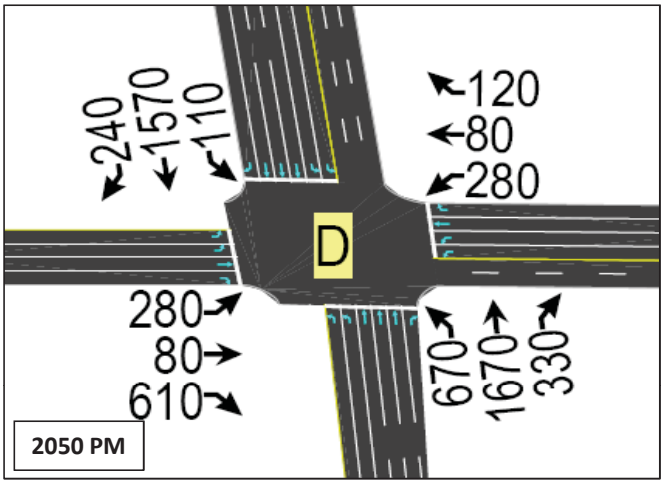
STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	113		
	DECELERATION LENGTH	455		
BENSON ROAD WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	127	41	
	DECELERATION LENGTH	185	185	
SD-100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	91		
	DECELERATION LENGTH	455		
BENSON ROAD EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	103	41	
	DECELERATION LENGTH	185	185	

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 45**

SD 100/60TH STREET N.



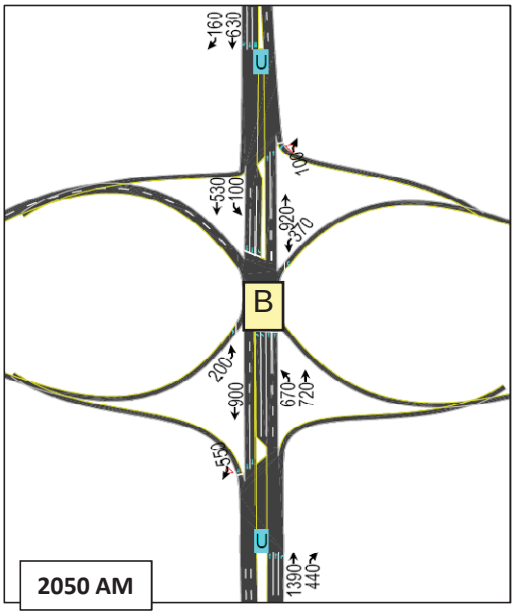


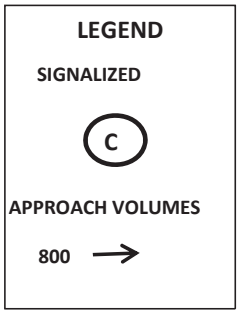


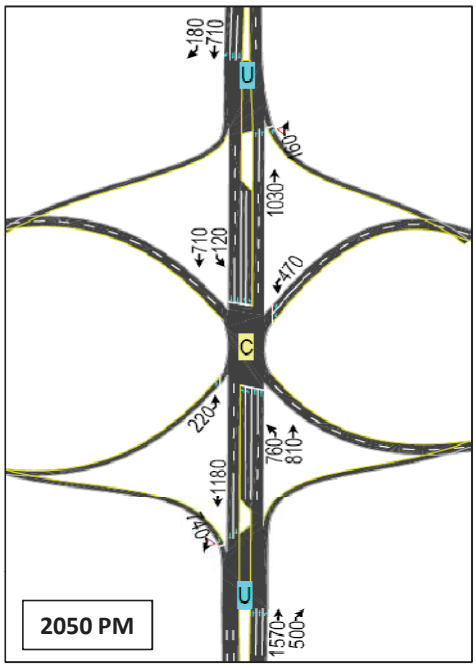
NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	79	615	0
	DECELERATION LENGTH	455	455	455
60TH STREET N WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	188	117	55
	DECELERATION LENGTH	185	185	185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	3	1
	QUEUE LENGTH	391	398	0
	DECELERATION LENGTH	455	455	455
6TH STREET N EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	1	1
	QUEUE LENGTH	168	116	0
	DECELERATION LENGTH	185	185	185

SD 100/INTERSTATE 90







NOTE:
1) The queue length below is representative of the Peak Hour with the longest 95th Percentile Queue, as calculated by Synchro software.
2) The deceleration length on SD 100 is based on 60 mph and the cross street is based on 40 mph.

N

STREET NAMES	LANE GEOMETRY RECOMMENDATIONS			
SD 100 SOUTHBOUND	NORTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	2	1
	QUEUE LENGTH	107	266	0
	DECELERATION LENGTH	455	455	455
I-90 WESTBOUND	EAST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	0	1
	QUEUE LENGTH	315		0
	DECELERATION LENGTH	185		185
SD 100 NORTHBOUND	SOUTH APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	2	2	1
	QUEUE LENGTH	284	197	0
	DECELERATION LENGTH	455	455	455
I-90 EASTBOUND	WEST APPROACH	LEFT-TURN LANES	THRU LANES	RIGHT-TURN LANES
	(NUMBER OF LANES)	1	0	1
	QUEUE LENGTH	171		0
	DECELERATION LENGTH	185		185

SD-100 TRAFFIC ANALYSIS - UPDATE 2011 | **FIGURE 47**

Movement	EBL	EBT	WBL	WBT	NBL	SBL
Lane Configurations						
Volume (vph)	920	240	300	820	190	600
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.97	0.91	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3252	3353	3252	4818	3252	3252
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3252	3353	3252	4818	3252	3252
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1045	273	341	932	216	682
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1045	273	341	932	216	682
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	5	2	1	6	3	7
Permitted Phases						
Actuated Green, G (s)	24.0	30.0	10.0	16.0	16.0	16.0
Effective Green, g (s)	28.0	34.0	14.0	20.0	20.0	20.0
Actuated g/C Ratio	0.35	0.42	0.18	0.25	0.25	0.25
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1138	1425	569	1205	813	813
v/s Ratio Prot	c0.32	0.08	0.10	c0.19	0.07	c0.21
v/s Ratio Perm						
v/c Ratio	0.92	0.19	0.60	0.77	0.27	0.84
Uniform Delay, d1	24.9	14.4	30.4	27.9	24.1	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.6	0.3	1.7	4.9	0.2	7.6
Delay (s)	36.5	14.7	32.1	32.8	24.3	36.1
Level of Service	D	B	C	C	C	D
Approach Delay (s)		32.0		32.6		
Approach LOS		C		C		

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	1273	10	28	1247	5	5	0	4	3	1	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	1384	11	30	1355	5	5	0	4	3	1	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					864							
pX, platoon unblocked	0.85						0.85	0.85		0.85	0.85	0.85
vC, conflicting volume	1361			1395			2144	3022	467	2095	3024	455
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	789			1395			1714	2752	467	1657	2756	0
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	84			93			85	100	99	92	91	97
cM capacity (veh/h)	678			466			36	12	532	43	12	906

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	SB 2
Volume Total	105	553	553	288	30	542	542	277	5	4	3	32
Volume Left	105	0	0	0	30	0	0	0	5	0	3	0
Volume Right	0	0	0	11	0	0	0	5	0	4	0	30
cSH	678	1700	1700	1700	466	1700	1700	1700	36	532	43	256
Volume to Capacity	0.16	0.33	0.33	0.17	0.07	0.32	0.32	0.16	0.15	0.01	0.08	0.12
Queue Length 95th (ft)	14	0	0	0	5	0	0	0	12	1	6	10
Control Delay (s)	11.3	0.0	0.0	0.0	13.3	0.0	0.0	0.0	123.3	11.8	94.8	21.0
Lane LOS	B				B				F	B	F	C
Approach Delay (s)	0.8				0.3				73.8		27.9	
Approach LOS									F		D	

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	45.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1180	20	30	1020	250	30	5	30	320	5	230
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0		5.0	4.0	2.0	5.0	5.0		4.0	5.0	3.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3252	4802		1613	4818	1500	1613	1482		3252	1698	1500
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3252	4802		1613	4818	1500	1613	1482		3252	1698	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	205	1341	23	34	1159	284	34	6	34	364	6	261
RTOR Reduction (vph)	0	2	0	0	0	0	0	32	0	0	0	0
Lane Group Flow (vph)	205	1362	0	34	1159	284	34	8	0	364	6	261
Heavy Vehicles (%)	2%	2%	6%	6%	2%	2%	6%	6%	6%	2%	6%	2%
Turn Type	Prot			Prot		Free	Prot			Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free						Free
Actuated Green, G (s)	9.8	29.6		3.3	23.1	65.0	5.0	4.1		7.0	6.1	65.0
Effective Green, g (s)	10.8	31.6		3.3	25.1	65.0	5.0	4.1		8.0	6.1	65.0
Actuated g/C Ratio	0.17	0.49		0.05	0.39	1.00	0.08	0.06		0.12	0.09	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	540	2335		82	1860	1500	124	93		400	159	1500
v/s Ratio Prot	c0.06	c0.28		0.02	0.24		0.02	0.01		c0.11	0.00	
v/s Ratio Perm						c0.19						0.17
v/c Ratio	0.38	0.58		0.41	0.62	0.19	0.27	0.09		0.91	0.04	0.17
Uniform Delay, d1	24.1	12.0		29.9	16.1	0.0	28.3	28.7		28.1	26.8	0.0
Progression Factor	1.00	1.00		0.83	0.94	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.1		2.3	1.1	0.2	1.2	0.4		24.3	0.1	0.3
Delay (s)	24.6	13.1		27.1	16.2	0.2	29.5	29.1		52.5	26.9	0.3
Level of Service	C	B		C	B	A	C	C		D	C	A
Approach Delay (s)		14.6			13.4			29.3			30.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.8%	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)	170	1240	120	130	1070	180	90	120	100	140	160	140
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0		4.0	4.0	2.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95		0.97	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3252	4754		3252	4818	1500	1676	3124		3252	3353	1500
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3252	4754		3252	4818	1500	1676	3124		3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	193	1409	136	148	1216	205	102	136	114	159	182	159
RTOR Reduction (vph)	0	16	0	0	0	0	0	86	0	0	0	0
Lane Group Flow (vph)	193	1529	0	148	1216	205	102	164	0	159	182	159
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Free	Prot			Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free						Free
Actuated Green, G (s)	5.0	21.8		3.2	20.0	65.0	4.0	15.0		5.0	16.0	65.0
Effective Green, g (s)	6.0	23.8		4.2	22.0	65.0	4.0	16.0		5.0	17.0	65.0
Actuated g/C Ratio	0.09	0.37		0.06	0.34	1.00	0.06	0.25		0.08	0.26	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	300	1741		210	1631	1500	103	769		250	877	1500
v/s Ratio Prot	c0.06	c0.32		0.05	0.25		c0.06	0.05		0.05	c0.05	
v/s Ratio Perm						c0.14						0.11
v/c Ratio	0.64	0.88		0.70	0.75	0.14	0.99	0.21		0.64	0.21	0.11
Uniform Delay, d1	28.5	19.2		29.8	19.0	0.0	30.5	19.5		29.1	18.7	0.0
Progression Factor	0.84	0.88		1.11	1.03	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.9	5.6		6.2	1.9	0.1	85.4	0.6		5.2	0.5	0.1
Delay (s)	28.0	22.6		39.2	21.4	0.1	115.9	20.1		34.3	19.3	0.1
Level of Service	C	C		D	C	A	F	C		C	B	A
Approach Delay (s)		23.2			20.3			47.9			18.0	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.5%	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)	180	1180	120	90	1080	120	100	80	60	90	120	200
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.91	1.00	1.00	0.91	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	0.94		1.00	0.91	
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)	1676	4818	1500	1676	4818	1500	1676	3138		1676	3038	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.48	1.00		0.65	1.00	
Satd. Flow (perm)	1676	4818	1500	1676	4818	1500	844	3138		1149	3038	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	205	1341	136	102	1227	136	114	91	68	102	136	227
RTOR Reduction (vph)	0	0	88	0	0	96	0	50	0	0	168	0
Lane Group Flow (vph)	205	1341	48	102	1227	40	114	109	0	102	195	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	8.0	21.0	21.0	4.0	17.0	17.0	20.0	16.0		20.0	16.0	
Effective Green, g (s)	9.0	23.0	23.0	5.0	19.0	19.0	20.0	17.0		20.0	17.0	
Actuated g/C Ratio	0.14	0.35	0.35	0.08	0.29	0.29	0.31	0.26		0.31	0.26	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	232	1705	531	129	1408	438	311	821		386	795	
v/s Ratio Prot	c0.12	c0.28		0.06	0.25		c0.02	0.03		0.02	0.06	
v/s Ratio Perm			0.03			0.03	c0.09			0.07		
v/c Ratio	0.88	0.79	0.09	0.79	0.87	0.09	0.37	0.13		0.26	0.25	
Uniform Delay, d1	27.5	18.8	14.0	29.5	21.8	16.7	16.7	18.4		16.6	18.9	
Progression Factor	1.36	0.93	1.62	0.76	1.55	3.84	1.00	1.00		1.00	1.00	
Incremental Delay, d2	19.2	2.1	0.2	21.5	5.9	0.3	0.7	0.3		0.4	0.7	
Delay (s)	56.6	19.5	22.8	43.8	39.7	64.5	17.5	18.7		17.0	19.7	
Level of Service	E	B	C	D	D	E	B	B		B	B	
Approach Delay (s)		24.3			42.3			18.2			19.1	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.0%	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)	260	790	280	270	900	260	240	280	370	230	180	150
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.93	
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)	3252	4818	1500	3252	4818	1500	3252	3067		3252	3125	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3067		3252	3125	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	295	898	318	307	1023	295	273	318	420	261	205	170
RTOR Reduction (vph)	0	0	230	0	0	213	0	178	0	0	126	0
Lane Group Flow (vph)	295	898	88	307	1023	82	273	560	0	261	249	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	6.0	16.0	16.0	6.0	16.0	16.0	7.0	17.0		6.0	16.0	
Effective Green, g (s)	7.0	18.0	18.0	7.0	18.0	18.0	7.0	18.0		6.0	17.0	
Actuated g/C Ratio	0.11	0.28	0.28	0.11	0.28	0.28	0.11	0.28		0.09	0.26	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	350	1334	415	350	1334	415	350	849		300	817	
v/s Ratio Prot	0.09	0.19		c0.09	c0.21		c0.08	c0.18		0.08	0.08	
v/s Ratio Perm			0.06			0.05						
v/c Ratio	0.84	0.67	0.21	0.88	0.77	0.20	0.78	0.66		0.87	0.31	
Uniform Delay, d1	28.5	20.9	18.1	28.6	21.6	18.0	28.2	20.8		29.1	19.3	
Progression Factor	0.85	1.64	6.09	0.87	1.39	3.16	1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.9	1.9	0.8	17.4	3.4	0.8	10.7	4.0		22.9	1.0	
Delay (s)	36.2	36.1	110.7	42.4	33.3	57.6	39.0	24.8		52.0	20.2	
Level of Service	D	D	F	D	C	E	D	C		D	C	
Approach Delay (s)		51.8			39.4			28.6			33.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	40.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.2%	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)	380	690	320	330	590	420	440	350	470	440	260	400
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.55	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	1892	3353	1500	1514	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	432	784	364	375	670	477	500	398	534	500	295	455
RTOR Reduction (vph)	0	0	242	0	0	197	0	0	241	0	0	252
Lane Group Flow (vph)	432	784	122	375	670	280	500	398	293	500	295	203
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	8.0	16.0	16.0	8.0	16.0	16.0	21.0	16.0	16.0	21.0	16.0	16.0
Effective Green, g (s)	9.0	18.0	18.0	9.0	18.0	18.0	21.0	17.0	16.0	21.0	17.0	16.0
Actuated g/C Ratio	0.14	0.28	0.28	0.14	0.28	0.28	0.32	0.26	0.25	0.32	0.26	0.25
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	450	1334	415	450	1334	415	716	877	369	623	877	369
v/s Ratio Prot	c0.13	0.16		0.12	0.14		0.05	0.12		c0.06	0.09	
v/s Ratio Perm			0.08			c0.19	0.17		0.20	c0.20		0.14
v/c Ratio	0.96	0.59	0.30	0.83	0.50	0.67	0.70	0.45	0.79	0.80	0.34	0.55
Uniform Delay, d1	27.8	20.3	18.5	27.3	19.7	20.9	18.1	20.1	23.0	18.9	19.4	21.4
Progression Factor	0.96	1.39	2.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	1.4	1.4	12.5	1.4	8.5	3.0	1.7	16.0	7.4	1.0	5.8
Delay (s)	53.3	29.6	55.4	39.8	21.1	29.4	21.1	21.8	38.9	26.3	20.5	27.2
Level of Service	D	C	E	D	C	C	C	C	D	C	C	C
Approach Delay (s)		42.0			28.3			27.9			25.2	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.9%	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)	290	1060	250	160	920	200	220	190	210	160	150	200
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.97	0.91	1.00	0.97	0.91	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	0.92		1.00	0.91	
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)	3252	4818	1500	3252	4818	1500	1676	3089		1676	3065	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.41	1.00		0.41	1.00	
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	720	3089		720	3065	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	330	1205	284	182	1045	227	250	216	239	182	170	227
RTOR Reduction (vph)	0	0	190	0	0	156	0	194	0	0	185	0
Lane Group Flow (vph)	330	1205	94	182	1045	71	250	261	0	182	212	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	6.0	17.1	17.1	5.0	16.1	16.1	15.8	9.8		15.8	9.8	
Effective Green, g (s)	7.0	19.1	19.1	6.0	18.1	18.1	15.8	10.8		15.8	10.8	
Actuated g/C Ratio	0.12	0.33	0.33	0.10	0.31	0.31	0.27	0.19		0.27	0.19	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	393	1589	495	337	1506	469	296	576		296	572	
v/s Ratio Prot	c0.10	c0.25		0.06	0.22		c0.09	0.08		0.06	0.07	
v/s Ratio Perm			0.06			0.05	c0.14			0.10		
v/c Ratio	0.84	0.76	0.19	0.54	0.69	0.15	0.84	0.45		0.61	0.37	
Uniform Delay, d1	24.9	17.3	13.9	24.6	17.5	14.4	18.6	20.9		17.3	20.6	
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	14.5	3.4	0.8	1.8	2.7	0.7	19.3	0.6		3.8	0.4	
Delay (s)	39.4	20.8	14.7	26.4	20.1	15.0	37.8	21.5		21.0	21.0	
Level of Service	D	C	B	C	C	B	D	C		C	C	
Approach Delay (s)		23.2			20.1			27.3			21.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

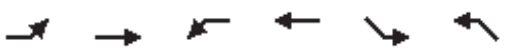
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1030	220	270	900	240	240	210	230	120	110	140
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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	0.92		1.00	0.92	
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)	3252	4818	1500	3252	4818	1500	1676	3090		1676	3071	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.46	1.00		0.39	1.00	
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	817	3090		685	3071	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	205	1170	250	307	1023	273	273	239	261	136	125	159
RTOR Reduction (vph)	0	0	170	0	0	181	0	202	0	0	129	0
Lane Group Flow (vph)	205	1170	80	307	1023	92	273	298	0	136	155	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	5.0	17.1	17.1	6.0	18.1	18.1	18.4	12.4		14.2	10.3	
Effective Green, g (s)	6.0	19.1	19.1	7.0	20.1	20.1	18.4	13.4		14.2	11.3	
Actuated g/C Ratio	0.10	0.32	0.32	0.12	0.34	0.34	0.31	0.23		0.24	0.19	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	328	1549	482	383	1630	508	340	697		229	584	
v/s Ratio Prot	0.06	c0.24		c0.09	0.21		c0.08	0.10		0.04	0.05	
v/s Ratio Perm			0.05			0.06	c0.17			0.10		
v/c Ratio	0.62	0.76	0.17	0.80	0.63	0.18	0.80	0.43		0.59	0.27	
Uniform Delay, d1	25.6	18.1	14.4	25.5	16.5	13.9	17.7	19.7		18.8	20.5	
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	3.7	3.5	0.7	11.4	1.8	0.8	12.8	0.4		4.1	0.2	
Delay (s)	29.3	21.5	15.2	37.0	18.3	14.6	30.5	20.1		22.9	20.8	
Level of Service	C	C	B	D	B	B	C	C		C	C	
Approach Delay (s)		21.5			21.3			23.8			21.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
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)	240	110	150	420	170	660	190	820	370	570	840	320
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	273	125	170	477	193	750	216	932	420	648	955	364
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	273	125	170	477	193	750	216	932	420	648	955	364
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.1	18.5	90.0	16.5	21.9	90.0	9.6	17.0	90.0	18.0	25.4	90.0
Effective Green, g (s)	13.1	19.5	90.0	16.5	22.9	90.0	10.6	19.0	90.0	19.0	27.4	90.0
Actuated g/C Ratio	0.15	0.22	1.00	0.18	0.25	1.00	0.12	0.21	1.00	0.21	0.30	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	456	699	1443	574	821	1443	369	979	1443	661	1411	1443
v/s Ratio Prot	0.09	0.04		c0.15	0.06		0.07	c0.20		c0.21	0.21	
v/s Ratio Perm			0.12			c0.52			0.29			0.25
v/c Ratio	0.60	0.18	0.12	0.83	0.24	0.52	0.59	0.95	0.29	0.98	0.68	0.25
Uniform Delay, d1	36.0	28.7	0.0	35.4	26.6	0.0	37.6	35.0	0.0	35.3	27.4	0.0
Progression Factor	0.96	1.07	1.00	0.95	1.39	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.6	0.2	6.3	0.4	0.8	2.4	19.3	0.5	30.0	2.6	0.4
Delay (s)	36.5	31.4	0.2	40.0	37.3	0.8	40.0	54.3	0.5	65.3	30.0	0.4
Level of Service	D	C	A	D	D	A	D	D	A	E	C	A
Approach Delay (s)		24.5			18.9			37.9			36.2	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	490	350	540	490	460	560
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3130	3226	3130	3226	3130	3130
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3130	3226	3130	3226	3130	3130
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	557	398	614	557	523	636
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	557	398	614	557	523	636
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	7	4	3	8	1	5
Permitted Phases						
Actuated Green, G (s)	11.8	12.9	13.4	14.5	14.1	14.1
Effective Green, g (s)	12.8	13.9	14.4	15.5	15.1	15.1
Actuated g/C Ratio	0.23	0.25	0.26	0.28	0.27	0.27
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	723	809	814	903	853	853
v/s Ratio Prot	0.18	0.12	c0.20	c0.17	0.17	c0.20
v/s Ratio Perm						
v/c Ratio	0.77	0.49	0.75	0.62	0.61	0.75
Uniform Delay, d1	19.9	17.7	18.9	17.4	17.6	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.5	4.0	1.3	1.3	3.6
Delay (s)	25.0	18.2	22.9	18.6	18.9	22.0
Level of Service	C	B	C	B	B	C
Approach Delay (s)		22.2		20.9		
Approach LOS		C		C		

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.9%	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)	150	110	110	220	160	200	210	1330	220	230	1430	240
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.95		1.00	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.93		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613	2984		1613	2958		3130	4636	1443	3130	4636	1443
Flt Permitted	0.38	1.00		0.56	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	653	2984		953	2958		3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	170	125	125	250	182	227	239	1511	250	261	1625	273
RTOR Reduction (vph)	0	105	0	0	173	0	0	0	153	0	0	165
Lane Group Flow (vph)	170	145	0	250	236	0	239	1511	97	261	1625	108
Turn Type	pm+pt			pm+pt			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	15.4	10.4		15.4	10.4		9.0	25.1	25.1	9.5	25.6	25.6
Effective Green, g (s)	15.4	11.4		15.4	11.4		10.0	27.1	27.1	10.5	27.6	27.6
Actuated g/C Ratio	0.22	0.16		0.22	0.16		0.14	0.39	0.39	0.15	0.39	0.39
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0	6.0	5.0	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)	212	486		257	482		447	1795	559	470	1828	569
v/s Ratio Prot	0.06	0.05		c0.07	0.08		0.08	0.33		c0.08	c0.35	
v/s Ratio Perm	0.12			c0.14					0.07			0.07
v/c Ratio	0.80	0.30		0.97	0.49		0.53	0.84	0.17	0.56	0.89	0.19
Uniform Delay, d1	24.8	25.8		26.3	26.7		27.8	19.5	14.1	27.6	19.8	13.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.78	1.29	4.32
Incremental Delay, d2	19.2	0.3		48.2	0.8		1.2	5.0	0.7	1.0	5.1	0.5
Delay (s)	44.1	26.1		74.5	27.4		29.1	24.5	14.8	22.6	30.6	60.5
Level of Service	D	C		E	C		C	C	B	C	C	E
Approach Delay (s)		33.4			45.3			23.8			33.4	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.1%	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)	160	20	150	150	20	230	160	1380	140	170	1600	190
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	1698	1443	3130	1698	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	1698	1443	3294	1698	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	182	23	170	170	23	261	182	1568	159	193	1818	216
RTOR Reduction (vph)	0	0	64	0	0	5	0	0	89	0	0	110
Lane Group Flow (vph)	182	23	106	170	23	256	182	1568	70	193	1818	106
Turn Type	Prot		pm+ov	pm+pt		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	4.0	3.0	12.8	7.0	3.0	16.2	9.8	29.8	29.8	13.2	33.2	33.2
Effective Green, g (s)	5.0	4.0	12.8	9.0	4.0	16.2	10.8	30.8	30.8	14.2	34.2	34.2
Actuated g/C Ratio	0.07	0.06	0.18	0.13	0.06	0.23	0.15	0.44	0.44	0.20	0.49	0.49
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	224	97	367	412	97	437	483	2040	635	635	2265	705
v/s Ratio Prot	c0.06	0.01	0.04	0.03	0.01	c0.11	0.06	0.34		0.06	c0.39	
v/s Ratio Perm			0.03	0.02		0.07			0.05			0.07
v/c Ratio	0.81	0.24	0.29	0.41	0.24	0.58	0.38	0.77	0.11	0.30	0.80	0.15
Uniform Delay, d1	32.0	31.5	24.7	28.1	31.5	23.9	26.6	16.6	11.5	23.7	15.1	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.63	1.81	4.12	1.00	1.00	1.00
Incremental Delay, d2	19.7	1.3	0.4	0.7	1.3	2.0	0.3	1.7	0.2	0.3	3.1	0.4
Delay (s)	51.7	32.8	25.1	28.8	32.8	25.9	17.0	31.7	47.7	24.0	18.2	10.3
Level of Service	D	C	C	C	C	C	B	C	D	C	B	B
Approach Delay (s)		38.5			27.3			31.6			17.9	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	58.9%	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)	430	80	460	120	150	160	460	1160	150	130	1380	430
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	3353	1500	3252	3353	1500	3252	4818	1500	3252	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	3353	1500	3252	3353	1500	3252	4818	1500	3252	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	489	91	523	136	170	182	523	1318	170	148	1568	489
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	489	91	523	136	170	182	523	1318	170	148	1568	489
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.0	13.3	90.0	9.6	10.9	90.0	19.0	37.0	90.0	9.1	27.1	90.0
Effective Green, g (s)	13.0	14.3	90.0	10.6	11.9	90.0	20.0	39.0	90.0	10.1	29.1	90.0
Actuated g/C Ratio	0.14	0.16	1.00	0.12	0.13	1.00	0.22	0.43	1.00	0.11	0.32	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	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)	470	533	1500	383	443	1500	723	2088	1500	365	1558	1500
v/s Ratio Prot	c0.15	0.03		0.04	0.05		c0.16	0.27		0.05	c0.33	
v/s Ratio Perm			c0.35			0.12			0.11			0.33
v/c Ratio	1.04	0.17	0.35	0.36	0.38	0.12	0.72	0.63	0.11	0.41	1.01	0.33
Uniform Delay, d1	38.5	32.7	0.0	36.6	35.7	0.0	32.4	19.9	0.0	37.2	30.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.4	0.2	0.6	0.6	0.6	0.2	3.6	1.5	0.2	0.7	24.4	0.6
Delay (s)	90.9	32.9	0.6	37.1	36.3	0.2	36.0	21.4	0.2	37.9	54.8	0.6
Level of Service	F	C	A	D	D	A	D	C	A	D	D	A
Approach Delay (s)		43.3			23.0			23.4			41.7	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	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)	150	10	370	90	10	40	250	1460	40	40	1480	210
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	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		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1676	1765	1500	1676	1552		3252	4818	1500	1676	4818	1500
Flt Permitted	1.00	1.00	1.00	0.65	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1765	1765	1500	1139	1552		3252	4818	1500	1676	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	170	11	420	102	11	45	284	1659	45	45	1682	239
RTOR Reduction (vph)	0	0	0	0	40	0	0	0	21	0	0	151
Lane Group Flow (vph)	170	11	420	102	16	0	284	1659	24	45	1682	88
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		pm+ov	pm+pt			Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8					2			6
Actuated Green, G (s)	8.2	2.9	17.6	14.8	6.2		14.7	33.5	33.5	5.0	23.8	23.8
Effective Green, g (s)	8.2	3.9	19.6	14.8	7.2		15.7	35.5	35.5	6.0	25.8	25.8
Actuated g/C Ratio	0.12	0.06	0.28	0.21	0.10		0.22	0.51	0.51	0.09	0.37	0.37
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	6.0	6.0	5.0	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	3.0
Lane Grp Cap (vph)	200	98	506	307	160		729	2443	761	144	1776	553
v/s Ratio Prot	c0.06	0.01	c0.19	c0.04	0.01		0.09	0.34		0.03	c0.35	
v/s Ratio Perm	0.04		0.09	0.03					0.02			0.06
v/c Ratio	0.85	0.11	0.83	0.33	0.10		0.39	0.68	0.03	0.31	0.95	0.16
Uniform Delay, d1	30.3	31.4	23.6	23.3	28.5		23.1	13.0	8.6	30.1	21.4	14.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.1	0.5	11.1	0.6	0.3		0.3	1.5	0.1	1.2	12.0	0.6
Delay (s)	57.4	31.9	34.7	23.9	28.7		23.4	14.5	8.7	31.3	33.5	15.4
Level of Service	E	C	C	C	C		C	B	A	C	C	B
Approach Delay (s)		41.1			25.6			15.7			31.2	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.6%	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)	300	400	450	560	510	410	550	610	490	360	720	430
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	4818	1500	3252	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	4818	1500	3252	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	341	455	511	636	580	466	625	693	557	409	818	489
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	341	455	511	636	580	466	625	693	557	409	818	489
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.1	13.5	90.0	18.0	18.4	90.0	19.4	21.9	90.0	15.6	18.1	90.0
Effective Green, g (s)	14.1	14.5	90.0	19.0	19.4	90.0	20.4	23.9	90.0	16.6	20.1	90.0
Actuated g/C Ratio	0.16	0.16	1.00	0.21	0.22	1.00	0.23	0.27	1.00	0.18	0.22	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	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)	509	776	1500	687	1039	1500	737	1279	1500	600	1076	1500
v/s Ratio Prot	0.10	0.09		c0.20	c0.12		c0.19	0.14		0.13	c0.17	
v/s Ratio Perm			0.34			0.31			c0.37			0.33
v/c Ratio	0.67	0.59	0.34	0.93	0.56	0.31	0.85	0.54	0.37	0.68	0.76	0.33
Uniform Delay, d1	35.8	35.0	0.0	34.8	31.5	0.0	33.3	28.4	0.0	34.2	32.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	1.1	0.6	18.4	0.7	0.5	9.0	1.7	0.7	3.2	5.1	0.6
Delay (s)	39.1	36.1	0.6	53.2	32.1	0.5	42.3	30.0	0.7	37.4	37.8	0.6
Level of Service	D	D	A	D	C	A	D	C	A	D	D	A
Approach Delay (s)		23.0			31.3			25.4			27.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.6%	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)	130	70	110	230	230	290	170	890	260	250	1170	160
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1676	3353	1500	1676	3353	1500	1676	4818	1500	3252	4818	1500
Flt Permitted	0.59	1.00	1.00	0.59	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1042	3353	1500	1039	3353	1500	1676	4818	1500	3252	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	148	80	125	261	261	330	193	1011	295	284	1330	182
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	148	80	125	261	261	330	193	1011	295	284	1330	182
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)	12.8	8.8	65.0	16.2	10.5	65.0	11.6	20.5	65.0	10.0	18.9	65.0
Effective Green, g (s)	12.8	9.8	65.0	16.2	11.5	65.0	12.6	22.5	65.0	11.0	20.9	65.0
Actuated g/C Ratio	0.20	0.15	1.00	0.25	0.18	1.00	0.19	0.35	1.00	0.17	0.32	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	244	506	1500	315	593	1500	325	1668	1500	550	1549	1500
v/s Ratio Prot	0.04	0.02		c0.07	0.08		c0.12	0.21		0.09	c0.28	
v/s Ratio Perm	0.08		0.08	c0.13		c0.22			0.20			0.12
v/c Ratio	0.61	0.16	0.08	0.83	0.44	0.22	0.59	0.61	0.20	0.52	0.86	0.12
Uniform Delay, d1	23.1	24.0	0.0	22.5	23.9	0.0	23.9	17.6	0.0	24.6	20.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	1.12	1.00
Incremental Delay, d2	4.2	0.1	0.1	16.2	0.5	0.3	2.9	1.6	0.3	0.6	4.6	0.1
Delay (s)	27.3	24.2	0.1	38.8	24.4	0.3	26.8	19.2	0.3	17.7	27.8	0.1
Level of Service	C	C	A	D	C	A	C	B	A	B	C	A
Approach Delay (s)		16.9			19.5			16.5			23.4	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.9%	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)	280	210	240	230	220	310	260	870	180	270	1110	380
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3353	1500	3252	3353	1443	3252	4636	1500	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3353	1500	3252	3353	1443	3252	4636	1500	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	318	239	273	261	250	352	295	989	205	307	1261	432
RTOR Reduction (vph)	0	0	11	0	0	180	0	0	0	0	0	0
Lane Group Flow (vph)	318	239	262	261	250	172	295	989	205	307	1261	432
Heavy Vehicles (%)	6%	2%	2%	2%	2%	6%	2%	6%	2%	6%	6%	6%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Actuated Green, G (s)	7.0	12.3	20.8	7.0	12.3	12.3	8.5	20.3	70.0	9.4	22.2	70.0
Effective Green, g (s)	8.0	13.3	22.8	8.0	13.3	13.3	9.5	22.3	70.0	10.4	23.2	70.0
Actuated g/C Ratio	0.11	0.19	0.33	0.11	0.19	0.19	0.14	0.32	1.00	0.15	0.33	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	5.0	
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)	358	637	574	372	637	274	441	1477	1500	465	1537	1443
v/s Ratio Prot	c0.10	0.07	0.06	0.08	0.07		0.09	0.21		c0.10	c0.27	
v/s Ratio Perm			0.11			c0.12			0.14			c0.30
v/c Ratio	0.89	0.38	0.46	0.70	0.39	0.63	0.67	0.67	0.14	0.66	0.82	0.30
Uniform Delay, d1	30.6	24.7	18.7	29.9	24.8	26.1	28.8	20.7	0.0	28.1	21.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.65	1.05	1.00
Incremental Delay, d2	22.4	0.4	0.6	5.9	0.4	4.5	3.8	2.4	0.2	2.5	3.6	0.4
Delay (s)	52.9	25.1	19.3	35.7	25.2	30.5	32.6	23.1	0.2	20.8	26.2	0.4
Level of Service	D	C	B	D	C	C	C	C	A	C	C	A
Approach Delay (s)		33.8			30.6			21.8			19.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

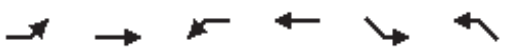
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	20	50	100	50	100	50	1340	70	80	1610	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.89		1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613	2882		1613	2904		1613	4636	1443	1613	4636	1443
Flt Permitted	0.64	1.00		0.62	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1093	2882		1059	2904		1613	4636	1443	1613	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	57	23	57	114	57	114	57	1523	80	91	1830	68
RTOR Reduction (vph)	0	50	0	0	98	0	0	0	43	0	0	34
Lane Group Flow (vph)	57	30	0	114	73	0	57	1523	37	91	1830	34
Turn Type	pm+pt			pm+pt			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	10.9	7.9		12.9	8.9		5.5	30.0	30.0	8.1	32.6	32.6
Effective Green, g (s)	10.9	8.9		12.9	9.9		6.5	32.0	32.0	9.1	34.6	34.6
Actuated g/C Ratio	0.16	0.13		0.18	0.14		0.09	0.46	0.46	0.13	0.49	0.49
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0	6.0	5.0	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)	192	366		227	411		150	2119	660	210	2292	713
v/s Ratio Prot	0.01	0.01		c0.03	0.03		0.04	0.33		c0.06	c0.39	
v/s Ratio Perm	0.03			c0.06					0.03			0.02
v/c Ratio	0.30	0.08		0.50	0.18		0.38	0.72	0.06	0.43	0.80	0.05
Uniform Delay, d1	25.9	26.9		25.1	26.5		29.9	15.4	10.6	28.1	14.8	9.2
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	0.9	0.1		1.7	0.2		1.6	2.1	0.2	1.4	3.0	0.1
Delay (s)	26.7	27.0		26.9	26.7		31.5	17.5	10.7	29.5	17.8	9.3
Level of Service	C	C		C	C		C	B	B	C	B	A
Approach Delay (s)		26.9			26.8			17.7			18.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.7%	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)	180	160	220	360	270	310	270	930	290	290	1170	260
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	205	182	250	409	307	352	307	1057	330	330	1330	295
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	205	182	250	409	307	352	307	1057	330	330	1330	295
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.8	11.2	75.0	9.0	12.4	75.0	10.7	23.3	75.0	11.5	24.1	75.0
Effective Green, g (s)	8.8	12.2	75.0	10.0	13.4	75.0	11.7	24.3	75.0	12.5	25.1	75.0
Actuated g/C Ratio	0.12	0.16	1.00	0.13	0.18	1.00	0.16	0.32	1.00	0.17	0.33	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	367	525	1443	417	576	1443	488	1502	1443	522	1552	1443
v/s Ratio Prot	0.07	0.06		c0.13	c0.10		0.10	0.23		c0.11	c0.29	
v/s Ratio Perm			0.17			c0.24			0.23			0.20
v/c Ratio	0.56	0.35	0.17	0.98	0.53	0.24	0.63	0.70	0.23	0.63	0.86	0.20
Uniform Delay, d1	31.3	27.9	0.0	32.4	28.0	0.0	29.6	22.2	0.0	29.1	23.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.4	0.3	38.8	1.0	0.4	2.5	2.8	0.4	2.5	6.3	0.3
Delay (s)	33.1	28.3	0.3	71.2	28.9	0.4	32.2	25.0	0.4	31.6	29.6	0.3
Level of Service	C	C	A	E	C	A	C	C	A	C	C	A
Approach Delay (s)		18.8			35.7			21.5			25.5	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	200	200	340	340	280	250
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3252	3353	3252	3353	3252	3252
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3252	3353	3252	3353	3252	3252
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	227	227	386	386	318	284
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	227	227	386	386	318	284
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	7	4	3	8	1	1
Permitted Phases						
Actuated Green, G (s)	4.4	7.9	6.6	10.1	8.0	8.0
Effective Green, g (s)	8.4	11.9	10.6	14.1	12.0	12.0
Actuated g/C Ratio	0.21	0.29	0.26	0.35	0.30	0.30
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)	674	985	851	1167	964	964
v/s Ratio Prot	0.07	0.07	c0.12	c0.12	c0.10	0.09
v/s Ratio Perm						
v/c Ratio	0.34	0.23	0.45	0.33	0.33	0.29
Uniform Delay, d1	13.7	10.8	12.5	9.7	11.1	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.4	0.2	0.2	0.2
Delay (s)	14.0	11.0	12.9	9.9	11.3	11.2
Level of Service	B	B	B	A	B	B
Approach Delay (s)		12.5		11.4		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	4.0
Intersection Capacity Utilization	34.5%	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)	180	40	510	270	60	100	400	900	160	180	930	450
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	6.0	5.0	4.0	2.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1676	1698	1500	1613	1698	1443	3252	4818	1443	1613	4818	1500
Flt Permitted	0.71	1.00	1.00	0.49	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1258	1698	1500	828	1698	1443	3252	4818	1443	1613	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	205	45	580	307	68	114	455	1023	182	205	1057	511
RTOR Reduction (vph)	0	0	0	0	0	101	0	0	135	0	0	0
Lane Group Flow (vph)	205	45	580	307	68	13	455	1023	47	205	1057	511
Heavy Vehicles (%)	2%	6%	2%	6%	6%	6%	2%	2%	6%	6%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8			2			Free
Actuated Green, G (s)	19.7	5.9	80.0	25.5	8.8	8.8	16.3	20.5	20.5	15.9	20.1	80.0
Effective Green, g (s)	21.7	5.9	80.0	25.5	8.8	8.8	17.3	22.5	20.5	15.9	22.1	80.0
Actuated g/C Ratio	0.27	0.07	1.00	0.32	0.11	0.11	0.22	0.28	0.26	0.20	0.28	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	6.0	6.0	5.0	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)	419	125	1500	428	187	159	703	1355	370	321	1331	1500
v/s Ratio Prot	0.09	0.03		c0.15	0.04		c0.14	0.21		0.13	c0.22	
v/s Ratio Perm	0.04		c0.39	c0.08		0.01			0.03			0.34
v/c Ratio	0.49	0.36	0.39	0.72	0.36	0.08	0.65	0.75	0.13	0.64	0.79	0.34
Uniform Delay, d1	24.2	35.3	0.0	23.0	33.0	32.0	28.6	26.2	22.9	29.4	26.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.8	0.8	5.7	1.2	0.2	2.1	4.0	0.7	4.1	5.0	0.6
Delay (s)	25.1	37.0	0.8	28.7	34.2	32.2	30.6	30.2	23.6	33.5	31.8	0.6
Level of Service	C	D	A	C	C	C	C	C	C	C	C	A
Approach Delay (s)		8.7			30.2			29.6			23.0	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	64.3%	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)	130	0	720	360	0	60	490	410	280	70	480	130
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0		4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00		1.00	1.00		1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613		1443	1613		1443	3130	3226	1443	1613	3226	1443
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1613		1443	1613		1443	3130	3226	1443	1613	3226	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	148	0	818	409	0	68	557	466	318	80	545	148
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	148	0	818	409	0	68	557	466	318	80	545	148
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7			3			5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	17.0		60.0	17.0		60.0	11.0	21.0	60.0	7.0	17.0	60.0
Effective Green, g (s)	17.0		60.0	17.0		60.0	11.0	21.0	60.0	7.0	17.0	60.0
Actuated g/C Ratio	0.28		1.00	0.28		1.00	0.18	0.35	1.00	0.12	0.28	1.00
Clearance Time (s)	5.0			5.0			5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	457		1443	457		1443	574	1129	1443	188	914	1443
v/s Ratio Prot	0.09			c0.25			c0.18	0.14		0.05	0.17	
v/s Ratio Perm			c0.57			0.05			0.22			0.10
v/c Ratio	0.32		0.57	0.89		0.05	0.97	0.41	0.22	0.43	0.60	0.10
Uniform Delay, d1	17.0		0.0	20.6		0.0	24.3	14.8	0.0	24.6	18.5	0.0
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	1.9		1.6	22.7		0.1	30.9	1.1	0.4	6.9	2.9	0.1
Delay (s)	18.8		1.6	43.3		0.1	55.3	15.9	0.4	31.5	21.4	0.1
Level of Service	B		A	D		A	E	B	A	C	C	A
Approach Delay (s)		4.3			37.2			28.6			18.4	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBL	WBT	NBL	SBL
Lane Configurations						
Volume (vph)	520	410	410	1000	210	560
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3252	3353	3252	3353	3252	3252
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3252	3353	3252	3353	3252	3252
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	591	466	466	1136	239	636
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	591	466	466	1136	239	636
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	5	2	1	6	3	7
Permitted Phases						
Actuated Green, G (s)	11.3	22.6	12.7	24.0	15.7	15.7
Effective Green, g (s)	15.3	26.6	16.7	28.0	19.7	19.7
Actuated g/C Ratio	0.20	0.35	0.22	0.37	0.26	0.26
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	663	1189	724	1252	854	854
v/s Ratio Prot	c0.18	0.14	0.14	c0.34	0.07	c0.20
v/s Ratio Perm						
v/c Ratio	0.89	0.39	0.64	0.91	0.28	0.74
Uniform Delay, d1	29.0	18.1	26.5	22.3	22.0	25.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.2	1.0	2.0	11.1	0.2	3.6
Delay (s)	43.3	19.1	28.4	33.4	22.2	28.9
Level of Service	D	B	C	C	C	C
Approach Delay (s)		32.6		31.9		
Approach LOS		C		C		

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	1442	3	4	1512	12	20	0	18	20	1	98
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	40	1639	3	5	1718	14	23	0	20	23	1	111
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					873							
pX, platoon unblocked	0.72						0.72	0.72		0.72	0.72	0.72
vC, conflicting volume	1732			1642			2414	3461	548	2380	3456	580
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	664			1642			1609	3060	548	1563	3053	0
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	94			99			35	100	96	52	85	86
cM capacity (veh/h)	645			372			35	8	470	47	8	773

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	SB 2
Volume Total	40	655	655	331	5	687	687	357	23	20	23	112
Volume Left	40	0	0	0	5	0	0	0	23	0	23	0
Volume Right	0	0	0	3	0	0	0	14	0	20	0	111
cSH	645	1700	1700	1700	372	1700	1700	1700	35	470	47	386
Volume to Capacity	0.06	0.39	0.39	0.19	0.01	0.40	0.40	0.21	0.65	0.04	0.48	0.29
Queue Length 95th (ft)	5	0	0	0	1	0	0	0	57	3	44	30
Control Delay (s)	10.9	0.0	0.0	0.0	14.8	0.0	0.0	0.0	222.2	13.0	137.5	18.1
Lane LOS	B				B				F	B	F	C
Approach Delay (s)	0.3				0.0				123.1		38.2	
Approach LOS									F		E	

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	45.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	1010	40	30	1410	350	30	5	30	310	5	190
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0		5.0	4.0	2.0	5.0	5.0		4.0	5.0	3.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3252	4783		1613	4818	1500	1613	1482		3252	1698	1500
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3252	4783		1613	4818	1500	1613	1482		3252	1698	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	489	1148	45	34	1602	398	34	6	34	352	6	216
RTOR Reduction (vph)	0	4	0	0	0	0	0	32	0	0	0	0
Lane Group Flow (vph)	489	1189	0	34	1602	398	34	8	0	352	6	216
Heavy Vehicles (%)	2%	2%	6%	6%	2%	2%	6%	6%	6%	2%	6%	2%
Turn Type	Prot			Prot		Free	Prot			Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free						Free
Actuated Green, G (s)	19.6	48.6		5.1	34.1	90.0	5.4	6.3		9.0	9.9	90.0
Effective Green, g (s)	20.6	50.6		5.1	36.1	90.0	5.4	6.3		10.0	9.9	90.0
Actuated g/C Ratio	0.23	0.56		0.06	0.40	1.00	0.06	0.07		0.11	0.11	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	744	2689		91	1933	1500	97	104		361	187	1500
v/s Ratio Prot	c0.15	0.25		0.02	c0.33		0.02	0.01		c0.11	0.00	
v/s Ratio Perm						c0.27						0.14
v/c Ratio	0.66	0.44		0.37	0.83	0.27	0.35	0.08		0.98	0.03	0.14
Uniform Delay, d1	31.5	11.5		40.9	24.2	0.0	40.6	39.1		39.9	35.8	0.0
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	2.1	0.5		2.6	4.3	0.4	2.2	0.3		40.4	0.1	0.2
Delay (s)	33.6	12.0		43.5	28.4	0.4	42.8	39.5		80.2	35.8	0.2
Level of Service	C	B		D	C	A	D	D		F	D	A
Approach Delay (s)		18.3			23.2			41.0			49.7	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1030	140	130	1440	180	140	100	190	240	150	210
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0		4.0	4.0	2.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	0.95		0.97	0.95	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3252	4731		3252	4818	1500	1676	3024		3252	3353	1500
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3252	4731		3252	4818	1500	1676	3024		3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	205	1170	159	148	1636	205	159	114	216	273	170	239
RTOR Reduction (vph)	0	23	0	0	0	0	0	100	0	0	0	0
Lane Group Flow (vph)	205	1306	0	148	1636	205	159	230	0	273	170	239
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot		Free	Prot			Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free						Free
Actuated Green, G (s)	4.0	25.0		4.0	25.0	75.0	8.0	18.0		8.0	18.0	75.0
Effective Green, g (s)	5.0	27.0		5.0	27.0	75.0	8.0	19.0		8.0	19.0	75.0
Actuated g/C Ratio	0.07	0.36		0.07	0.36	1.00	0.11	0.25		0.11	0.25	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	217	1703		217	1734	1500	179	766		347	849	1500
v/s Ratio Prot	c0.06	0.28		0.05	c0.34		c0.09	c0.08		0.08	0.05	
v/s Ratio Perm						0.14						0.16
v/c Ratio	0.94	0.77		0.68	0.94	0.14	0.89	0.30		0.79	0.20	0.16
Uniform Delay, d1	34.9	21.2		34.2	23.3	0.0	33.1	22.6		32.7	22.0	0.0
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	45.4	3.4		8.5	11.8	0.2	37.1	1.0		11.2	0.5	0.2
Delay (s)	80.2	24.6		42.8	35.1	0.2	70.2	23.6		43.8	22.6	0.2
Level of Service	F	C		D	D	A	E	C		D	C	A
Approach Delay (s)		32.0			32.1			38.8			23.3	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.7%	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)	150	1210	100	100	1350	140	160	80	90	130	120	240
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.91	1.00	1.00	0.91	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	0.92		1.00	0.90	
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)	1676	4818	1500	1676	4818	1500	1676	3087		1676	3017	
Flt Permitted	0.18	1.00	1.00	0.18	1.00	1.00	0.39	1.00		0.63	1.00	
Satd. Flow (perm)	310	4818	1500	321	4818	1500	697	3087		1112	3017	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	170	1375	114	114	1534	159	182	91	102	148	136	273
RTOR Reduction (vph)	0	0	72	0	0	103	0	75	0	0	154	0
Lane Group Flow (vph)	170	1375	42	114	1534	56	182	118	0	148	255	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	25.8	21.8	21.8	24.2	21.0	21.0	21.0	16.0		19.0	15.0	
Effective Green, g (s)	27.8	23.8	23.8	26.2	23.0	23.0	21.0	17.0		19.0	16.0	
Actuated g/C Ratio	0.43	0.37	0.37	0.40	0.35	0.35	0.32	0.26		0.29	0.25	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	238	1764	549	217	1705	531	300	807		360	743	
v/s Ratio Prot	c0.06	0.29		0.03	c0.32		c0.05	0.04		0.03	0.08	
v/s Ratio Perm	0.25		0.03	0.18		0.04	c0.15			0.09		
v/c Ratio	0.71	0.78	0.08	0.53	0.90	0.11	0.61	0.15		0.41	0.34	
Uniform Delay, d1	14.2	18.3	13.4	13.6	19.9	14.1	17.1	18.4		17.9	20.2	
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	9.7	3.5	0.3	2.3	8.0	0.4	3.4	0.4		0.8	1.3	
Delay (s)	23.9	21.8	13.7	15.9	27.9	14.5	20.5	18.8		18.6	21.4	
Level of Service	C	C	B	B	C	B	C	B		B	C	
Approach Delay (s)		21.4			26.0			19.6			20.7	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.7%	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)	220	840	370	440	1060	280	270	260	310	270	240	260
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	0.92	
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)	3252	4818	1500	3252	4818	1500	3252	3079		3252	3092	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3079		3252	3092	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	250	955	420	500	1205	318	307	295	352	307	273	295
RTOR Reduction (vph)	0	0	307	0	0	218	0	173	0	0	173	0
Lane Group Flow (vph)	250	955	113	500	1205	100	307	474	0	307	395	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	6.0	16.0	16.0	10.0	20.0	20.0	7.0	17.0		7.0	17.0	
Effective Green, g (s)	7.0	18.0	18.0	11.0	22.0	22.0	7.0	18.0		7.0	18.0	
Actuated g/C Ratio	0.10	0.26	0.26	0.16	0.31	0.31	0.10	0.26		0.10	0.26	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	325	1239	386	511	1514	471	325	792		325	795	
v/s Ratio Prot	0.08	0.20		c0.15	c0.25		c0.09	c0.15		0.09	0.13	
v/s Ratio Perm			0.08			0.07						
v/c Ratio	0.77	0.77	0.29	0.98	0.80	0.21	0.94	0.60		0.94	0.50	
Uniform Delay, d1	30.7	24.1	20.9	29.4	21.9	17.6	31.3	22.8		31.3	22.1	
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	10.5	4.7	1.9	33.9	4.4	1.0	35.3	3.3		35.3	2.2	
Delay (s)	41.2	28.8	22.8	63.3	26.4	18.7	66.6	26.2		66.6	24.4	
Level of Service	D	C	C	E	C	B	E	C		E	C	
Approach Delay (s)		29.1			34.3			39.2			39.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	650	410	450	780	400	450	280	430	540	400	550
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	1914	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	409	739	466	511	886	455	511	318	489	614	455	625
RTOR Reduction (vph)	0	0	229	0	0	299	0	0	264	0	0	274
Lane Group Flow (vph)	409	739	237	511	886	156	511	318	225	614	455	351
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8	4		4
Actuated Green, G (s)	11.9	16.0	16.0	12.0	16.1	16.1	13.0	23.0	23.0	28.0	19.0	19.0
Effective Green, g (s)	12.9	18.0	18.0	13.0	18.1	18.1	13.0	24.0	23.0	28.0	20.0	19.0
Actuated g/C Ratio	0.16	0.22	0.22	0.16	0.23	0.23	0.16	0.30	0.29	0.35	0.25	0.24
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	524	1084	338	528	1090	339	528	1006	431	820	838	356
v/s Ratio Prot	0.13	0.15		c0.16	c0.18		c0.16	0.09		0.08	0.14	
v/s Ratio Perm			0.16			0.10			c0.15	0.18		c0.23
v/c Ratio	0.78	0.68	0.70	0.97	0.81	0.46	0.97	0.32	0.52	0.75	0.54	0.99
Uniform Delay, d1	32.2	28.4	28.5	33.3	29.3	26.7	33.3	21.7	23.9	21.1	26.0	30.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.01	1.09	1.00	1.00	1.00
Incremental Delay, d2	7.4	3.5	11.5	30.7	6.6	4.4	30.6	0.8	4.5	3.8	2.5	44.5
Delay (s)	39.6	31.9	40.0	64.0	36.0	31.1	65.2	22.6	30.5	24.9	28.6	74.9
Level of Service	D	C	D	E	D	C	E	C	C	C	C	E
Approach Delay (s)		36.2			42.5			42.0			44.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.2%	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)	250	1060	310	230	1140	190	210	170	190	220	210	280
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.97	0.91	1.00	0.97	0.91	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	0.92		1.00	0.91	
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)	3252	4818	1500	3252	4818	1500	1676	3087		1676	3066	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.33	1.00		0.41	1.00	
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	588	3087		723	3066	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	284	1205	352	261	1295	216	239	193	216	250	239	318
RTOR Reduction (vph)	0	0	240	0	0	147	0	169	0	0	189	0
Lane Group Flow (vph)	284	1205	112	261	1295	69	239	240	0	250	368	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	5.0	17.1	17.1	5.0	17.1	17.1	18.0	12.0		18.0	12.0	
Effective Green, g (s)	6.0	19.1	19.1	6.0	19.1	19.1	18.0	13.0		18.0	13.0	
Actuated g/C Ratio	0.10	0.32	0.32	0.10	0.32	0.32	0.30	0.22		0.30	0.22	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	325	1531	477	325	1531	477	285	668		312	663	
v/s Ratio Prot	c0.09	0.25		0.08	c0.27		c0.08	0.08		0.08	0.12	
v/s Ratio Perm			0.07			0.05	c0.17			0.16		
v/c Ratio	0.87	0.79	0.23	0.80	0.85	0.14	0.84	0.36		0.80	0.56	
Uniform Delay, d1	26.7	18.7	15.1	26.5	19.1	14.7	18.2	20.0		17.9	21.0	
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	21.9	4.2	1.2	13.3	5.9	0.6	18.9	0.3		13.7	1.0	
Delay (s)	48.6	22.8	16.3	39.8	25.1	15.3	37.1	20.3		31.7	22.0	
Level of Service	D	C	B	D	C	B	D	C		C	C	
Approach Delay (s)		25.5			26.0			26.5			25.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

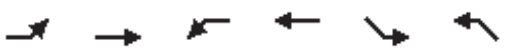
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	1020	300	350	1110	200	240	190	230	170	150	210
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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	0.92		1.00	0.91	
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)	3252	4818	1500	3252	4818	1500	1676	3078		1676	3059	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.39	1.00		0.38	1.00	
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	687	3078		666	3059	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	170	1159	341	398	1261	227	273	216	261	193	170	239
RTOR Reduction (vph)	0	0	232	0	0	143	0	180	0	0	163	0
Lane Group Flow (vph)	170	1159	109	398	1261	84	273	297	0	193	246	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	4.0	17.1	17.1	7.0	20.1	20.1	15.6	10.6		15.6	10.6	
Effective Green, g (s)	5.0	19.1	19.1	8.0	22.1	22.1	15.6	11.6		15.6	11.6	
Actuated g/C Ratio	0.08	0.32	0.32	0.13	0.37	0.37	0.26	0.19		0.26	0.19	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	272	1541	480	436	1784	555	262	598		259	594	
v/s Ratio Prot	0.05	0.24		c0.12	c0.26		c0.09	0.10		0.06	0.08	
v/s Ratio Perm			0.07			0.06	c0.18			0.13		
v/c Ratio	0.62	0.75	0.23	0.91	0.71	0.15	1.04	0.50		0.75	0.41	
Uniform Delay, d1	26.4	18.2	14.9	25.5	16.0	12.5	21.0	21.4		19.0	21.1	
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	4.4	3.4	1.1	23.2	2.4	0.6	67.0	0.7		11.0	0.5	
Delay (s)	30.9	21.6	16.0	48.7	18.4	13.1	87.9	22.1		30.1	21.5	
Level of Service	C	C	B	D	B	B	F	C		C	C	
Approach Delay (s)		21.4			24.2			46.1			24.3	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
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)	300	160	220	460	130	640	170	800	450	740	980	280
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	341	182	250	523	148	727	193	909	511	841	1114	318
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	341	182	250	523	148	727	193	909	511	841	1114	318
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.5	16.5	90.0	17.5	19.5	90.0	8.7	16.0	90.0	20.0	27.3	90.0
Effective Green, g (s)	14.5	17.5	90.0	17.5	20.5	90.0	9.7	18.0	90.0	21.0	29.3	90.0
Actuated g/C Ratio	0.16	0.19	1.00	0.19	0.23	1.00	0.11	0.20	1.00	0.23	0.33	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	504	627	1443	609	735	1443	337	927	1443	730	1509	1443
v/s Ratio Prot	0.11	0.06		c0.17	0.05		0.06	c0.20		c0.27	0.24	
v/s Ratio Perm			0.17			c0.50			0.35			0.22
v/c Ratio	0.68	0.29	0.17	0.86	0.20	0.50	0.57	0.98	0.35	1.15	0.74	0.22
Uniform Delay, d1	35.5	30.9	0.0	35.1	28.1	0.0	38.2	35.8	0.0	34.5	26.9	0.0
Progression Factor	0.97	1.05	1.00	0.95	1.34	1.00	1.00	1.00	1.00	1.17	0.98	1.00
Incremental Delay, d2	3.6	1.2	0.3	7.5	0.4	0.8	2.3	25.2	0.7	83.3	3.2	0.3
Delay (s)	38.0	33.5	0.3	40.9	38.1	0.8	40.5	61.1	0.7	123.8	29.6	0.3
Level of Service	D	C	A	D	D	A	D	E	A	F	C	A
Approach Delay (s)		24.7			19.7			39.5			60.4	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	40.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	680	540	550	540	590	460
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3130	3226	3130	3226	3130	3130
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3130	3226	3130	3226	3130	3130
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	773	614	625	614	670	523
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	773	614	625	614	670	523
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	7	4	3	8	1	5
Permitted Phases						
Actuated Green, G (s)	15.0	16.1	13.6	14.7	13.8	13.8
Effective Green, g (s)	16.0	17.1	14.6	15.7	14.8	14.8
Actuated g/C Ratio	0.27	0.29	0.25	0.27	0.25	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	856	943	781	866	792	792
v/s Ratio Prot	c0.25	c0.19	0.20	0.19	c0.21	0.17
v/s Ratio Perm						
v/c Ratio	0.90	0.65	0.80	0.71	0.85	0.66
Uniform Delay, d1	20.5	18.1	20.6	19.3	20.8	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.7	1.6	5.9	2.7	8.3	2.1
Delay (s)	33.2	19.7	26.5	22.0	29.1	21.7
Level of Service	C	B	C	C	C	C
Approach Delay (s)		27.3		24.3		
Approach LOS		C		C		

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	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)	200	150	220	200	150	220	190	1580	290	300	1460	190
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.95		1.00	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.91		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613	2938		1613	2938		3130	4636	1443	3130	4636	1443
Flt Permitted	0.31	1.00		0.31	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	535	2938		535	2938		3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	227	170	250	227	170	250	216	1795	330	341	1659	216
RTOR Reduction (vph)	0	152	0	0	149	0	0	0	186	0	0	114
Lane Group Flow (vph)	227	268	0	227	271	0	216	1795	144	341	1659	102
Turn Type	pm+pt			pm+pt			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	20.7	12.7		20.7	12.7		8.7	37.3	37.3	12.0	40.6	40.6
Effective Green, g (s)	20.7	13.7		20.7	13.7		9.7	39.3	39.3	13.0	42.6	42.6
Actuated g/C Ratio	0.23	0.15		0.23	0.15		0.11	0.44	0.44	0.14	0.47	0.47
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0	6.0	5.0	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)	219	447		219	447		337	2024	630	452	2194	683
v/s Ratio Prot	c0.09	0.09		0.09	0.09		0.07	c0.39		c0.11	c0.36	
v/s Ratio Perm	c0.15			0.15					0.10			0.07
v/c Ratio	1.04	0.60		1.04	0.61		0.64	0.89	0.23	0.75	0.76	0.15
Uniform Delay, d1	33.0	35.6		33.0	35.6		38.5	23.3	15.9	37.0	19.4	13.4
Progression Factor	1.00	1.00		1.00	1.00		1.14	0.75	0.06	0.92	1.22	3.92
Incremental Delay, d2	70.7	2.3		70.7	2.3		4.0	6.1	0.8	5.0	1.7	0.3
Delay (s)	103.7	37.9		103.7	37.9		48.0	23.7	1.7	38.8	25.4	52.9
Level of Service	F	D		F	D		D	C	A	D	C	D
Approach Delay (s)		61.0			61.0			22.8			30.1	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	30	170	150	20	220	130	1710	160	230	1630	180
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	1698	1443	3130	1698	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	1698	1443	3130	1698	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	284	34	193	170	23	250	148	1943	182	261	1852	205
RTOR Reduction (vph)	0	0	19	0	0	5	0	0	96	0	0	100
Lane Group Flow (vph)	284	34	174	170	23	245	148	1943	86	261	1852	105
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.4	6.0	16.8	8.0	3.6	18.3	10.8	41.3	41.3	14.7	45.2	45.2
Effective Green, g (s)	11.4	7.0	16.8	9.0	4.6	18.3	11.8	42.3	42.3	15.7	46.2	46.2
Actuated g/C Ratio	0.13	0.08	0.19	0.10	0.05	0.20	0.13	0.47	0.47	0.17	0.51	0.51
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	396	132	350	313	87	374	410	2179	678	546	2380	741
v/s Ratio Prot	c0.09	0.02	c0.06	0.05	0.01	c0.11	0.05	c0.42		0.08	c0.40	
v/s Ratio Perm			0.06			0.06			0.06			0.07
v/c Ratio	0.72	0.26	0.50	0.54	0.26	0.66	0.36	0.89	0.13	0.48	0.78	0.14
Uniform Delay, d1	37.8	39.1	32.8	38.5	41.1	33.0	35.7	21.8	13.4	33.5	17.7	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.76	1.46	4.22	1.00	1.00	1.00
Incremental Delay, d2	6.1	1.0	1.1	1.9	1.6	4.1	0.3	3.0	0.2	0.7	2.6	0.4
Delay (s)	43.8	40.1	33.9	40.5	42.7	37.1	27.4	34.9	56.8	34.1	20.3	11.9
Level of Service	D	D	C	D	D	D	C	C	E	C	C	B
Approach Delay (s)		39.9			38.7			36.2			21.1	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	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)	600	90	520	170	60	190	440	1520	220	210	1350	410
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	3353	1500	3252	3353	1500	3252	4818	1500	3252	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	3353	1500	3252	3353	1500	3252	4818	1500	3252	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	682	102	591	193	68	216	500	1727	250	239	1534	466
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	682	102	591	193	68	216	500	1727	250	239	1534	466
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	19.0	14.3	100.0	11.0	6.3	100.0	21.9	40.6	100.0	13.1	31.8	100.0
Effective Green, g (s)	20.0	15.3	100.0	12.0	7.3	100.0	22.9	42.6	100.0	14.1	33.8	100.0
Actuated g/C Ratio	0.20	0.15	1.00	0.12	0.07	1.00	0.23	0.43	1.00	0.14	0.34	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	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)	650	513	1500	390	245	1500	745	2052	1500	459	1628	1500
v/s Ratio Prot	c0.21	0.03		0.06	0.02		c0.15	c0.36		0.07	c0.32	
v/s Ratio Perm			c0.39			0.14			0.17			0.31
v/c Ratio	1.05	0.20	0.39	0.49	0.28	0.14	0.67	0.84	0.17	0.52	0.94	0.31
Uniform Delay, d1	40.0	37.0	0.0	41.2	43.9	0.0	35.1	25.7	0.0	39.8	32.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	48.9	0.2	0.8	1.0	0.6	0.2	2.4	4.4	0.2	1.1	12.3	0.5
Delay (s)	88.9	37.2	0.8	42.2	44.5	0.2	37.5	30.1	0.2	40.9	44.4	0.5
Level of Service	F	D	A	D	D	A	D	C	A	D	D	A
Approach Delay (s)		47.2			23.5			28.6			34.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.5%	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)	160	10	410	70	10	30	280	1960	70	30	1490	100
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	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		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1676	1765	1500	1676	1565		3252	4818	1500	1676	4818	1500
Flt Permitted	1.00	1.00	1.00	0.65	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1765	1765	1500	1139	1565		3252	4818	1500	1676	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	182	11	466	80	11	34	318	2227	80	34	1693	114
RTOR Reduction (vph)	0	0	0	0	31	0	0	0	25	0	0	69
Lane Group Flow (vph)	182	11	466	80	14	0	318	2227	55	34	1693	45
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		pm+ov	pm+pt			Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8					2			6
Actuated Green, G (s)	8.2	2.9	21.8	14.8	6.2		18.9	43.6	43.6	4.9	29.6	29.6
Effective Green, g (s)	8.2	3.9	23.8	14.8	7.2		19.9	45.6	45.6	5.9	31.6	31.6
Actuated g/C Ratio	0.10	0.05	0.30	0.19	0.09		0.25	0.57	0.57	0.07	0.40	0.40
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	6.0	6.0	5.0	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	3.0
Lane Grp Cap (vph)	175	86	521	268	141		809	2746	855	124	1903	593
v/s Ratio Prot	c0.07	0.01	c0.22	c0.03	0.01		0.10	0.46		0.02	c0.35	
v/s Ratio Perm	0.04		0.09	0.02					0.04			0.03
v/c Ratio	1.04	0.13	0.89	0.30	0.10		0.39	0.81	0.06	0.27	0.89	0.08
Uniform Delay, d1	35.9	36.4	26.9	28.0	33.4		25.0	13.8	7.7	35.0	22.6	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.77	1.56	3.51
Incremental Delay, d2	79.0	0.7	17.6	0.6	0.3		0.3	2.7	0.1	0.9	5.1	0.2
Delay (s)	114.9	37.1	44.5	28.6	33.7		25.3	16.5	7.8	28.0	40.4	53.1
Level of Service	F	D	D	C	C		C	B	A	C	D	D
Approach Delay (s)		63.8			30.4			17.3			41.0	
Approach LOS		E			C			B			D	

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.3%	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)	450	540	530	450	470	400	570	860	720	430	640	340
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	4818	1500	3252	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	4818	1500	3252	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	511	614	602	511	534	455	648	977	818	489	727	386
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	511	614	602	511	534	455	648	977	818	489	727	386
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.0	14.6	80.0	12.0	14.6	80.0	16.4	18.1	80.0	14.3	16.0	80.0
Effective Green, g (s)	13.0	15.6	80.0	13.0	15.6	80.0	17.4	20.1	80.0	15.3	18.0	80.0
Actuated g/C Ratio	0.16	0.19	1.00	0.16	0.19	1.00	0.22	0.25	1.00	0.19	0.22	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	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)	528	940	1500	528	940	1500	707	1211	1500	622	1084	1500
v/s Ratio Prot	c0.16	0.13		0.16	0.11		c0.20	c0.20		0.15	0.15	
v/s Ratio Perm			0.40			0.30			c0.55			0.26
v/c Ratio	0.97	0.65	0.40	0.97	0.57	0.30	0.92	0.81	0.55	0.79	0.67	0.26
Uniform Delay, d1	33.3	29.7	0.0	33.3	29.2	0.0	30.6	28.1	0.0	30.8	28.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.83	1.18	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.7	1.6	0.8	30.7	0.8	0.5	11.8	3.9	0.9	6.5	3.3	0.4
Delay (s)	64.0	31.3	0.8	64.0	29.9	0.5	37.1	37.0	0.9	37.3	31.6	0.4
Level of Service	E	C	A	E	C	A	D	D	A	D	C	A
Approach Delay (s)		30.4			32.6			24.9			25.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.4%	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)	220	100	170	210	210	290	150	1220	340	350	1030	150
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1676	3353	1500	1676	3353	1500	1676	4818	1500	3252	4818	1500
Flt Permitted	0.60	1.00	1.00	0.53	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1064	3353	1500	934	3353	1500	1676	4818	1500	3252	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	250	114	193	239	239	330	170	1386	386	398	1170	170
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	250	114	193	239	239	330	170	1386	386	398	1170	170
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)	13.8	8.8	70.0	18.8	11.3	70.0	11.2	21.0	70.0	12.7	22.5	70.0
Effective Green, g (s)	13.8	9.8	70.0	18.8	12.3	70.0	12.2	23.0	70.0	13.7	24.5	70.0
Actuated g/C Ratio	0.20	0.14	1.00	0.27	0.18	1.00	0.17	0.33	1.00	0.20	0.35	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	253	469	1500	330	589	1500	292	1583	1500	636	1686	1500
v/s Ratio Prot	c0.07	0.03		c0.08	0.07		0.10	c0.29		c0.12	0.24	
v/s Ratio Perm	c0.12		0.13	0.12		0.22			c0.26			0.11
v/c Ratio	0.99	0.24	0.13	0.72	0.41	0.22	0.58	0.88	0.26	0.63	0.69	0.11
Uniform Delay, d1	27.2	26.8	0.0	22.2	25.6	0.0	26.6	22.2	0.0	25.8	19.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.7	0.3	0.2	7.7	0.5	0.3	2.9	7.1	0.4	1.9	2.4	0.2
Delay (s)	80.0	27.1	0.2	29.9	26.1	0.3	29.5	29.3	0.4	27.7	21.9	0.2
Level of Service	E	C	A	C	C	A	C	C	A	C	C	A
Approach Delay (s)		41.5			16.7			23.5			21.1	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.7%	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)	410	280	300	220	200	340	240	1230	260	340	1010	320
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3353	1500	3252	3353	1443	3252	4636	1500	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3353	1500	3252	3353	1443	3252	4636	1500	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	466	318	341	250	227	386	273	1398	295	386	1148	364
RTOR Reduction (vph)	0	0	25	0	0	171	0	0	0	0	0	0
Lane Group Flow (vph)	466	318	316	250	227	215	273	1398	295	386	1148	364
Heavy Vehicles (%)	6%	2%	2%	2%	2%	6%	2%	6%	2%	6%	6%	6%
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Actuated Green, G (s)	13.0	17.2	26.3	10.5	14.7	14.7	9.1	29.8	90.0	11.5	33.2	90.0
Effective Green, g (s)	14.0	18.2	28.3	11.5	15.7	15.7	10.1	31.8	90.0	12.5	34.2	90.0
Actuated g/C Ratio	0.16	0.20	0.31	0.13	0.17	0.17	0.11	0.35	1.00	0.14	0.38	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0		5.0	5.0	
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)	487	678	538	416	585	252	365	1638	1500	435	1762	1443
v/s Ratio Prot	c0.15	0.09	0.07	0.08	0.07		0.08	c0.30		c0.12	0.25	
v/s Ratio Perm			0.14			c0.15			0.20			c0.25
v/c Ratio	0.96	0.47	0.59	0.60	0.39	0.85	0.75	0.85	0.20	0.89	0.65	0.25
Uniform Delay, d1	37.7	31.6	25.9	37.1	32.9	36.0	38.7	26.9	0.0	38.1	23.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.8	0.5	1.6	2.4	0.4	23.4	8.1	5.9	0.3	19.1	1.9	0.4
Delay (s)	67.5	32.2	27.6	39.5	33.3	59.4	46.9	32.8	0.3	57.2	24.9	0.4
Level of Service	E	C	C	D	C	E	D	C	A	E	C	A
Approach Delay (s)		45.4			46.8			29.9			26.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

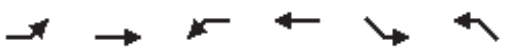
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	10	70	100	10	110	60	1800	120	120	1500	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.87		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613	2801		1613	2782		1613	4636	1443	1613	4636	1443
Flt Permitted	0.75	1.00		0.75	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1282	2801		1282	2782		1613	4636	1443	1613	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	91	11	80	114	11	125	68	2045	136	136	1705	68
RTOR Reduction (vph)	0	73	0	0	115	0	0	0	71	0	0	32
Lane Group Flow (vph)	91	18	0	114	22	0	68	2045	65	136	1705	36
Turn Type	pm+pt			pm+pt			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	9.3	5.3		9.3	5.3		7.6	33.9	33.9	11.8	38.1	38.1
Effective Green, g (s)	9.3	6.3		9.3	6.3		8.6	35.9	35.9	12.8	40.1	40.1
Actuated g/C Ratio	0.12	0.08		0.12	0.08		0.11	0.48	0.48	0.17	0.53	0.53
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0	6.0	5.0	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	235		177	234		185	2219	691	275	2479	772
v/s Ratio Prot	0.03	0.01		c0.03	0.01		0.04	c0.44		c0.08	0.37	
v/s Ratio Perm	0.04			c0.05					0.05			0.03
v/c Ratio	0.51	0.08		0.64	0.09		0.37	0.92	0.09	0.49	0.69	0.05
Uniform Delay, d1	30.5	31.7		31.0	31.7		30.7	18.2	10.7	28.2	12.8	8.3
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	2.5	0.1		7.8	0.2		1.2	7.8	0.3	1.4	1.6	0.1
Delay (s)	33.0	31.8		38.8	31.9		31.9	26.0	10.9	29.6	14.4	8.4
Level of Service	C	C		D	C		C	C	B	C	B	A
Approach Delay (s)		32.4			35.0			25.3			15.3	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
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)	260	220	310	330	250	310	270	1280	440	360	1040	210
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	295	250	352	375	284	352	307	1455	500	409	1182	239
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	295	250	352	375	284	352	307	1455	500	409	1182	239
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.0	12.2	90.0	11.0	14.2	90.0	9.8	31.4	90.0	15.4	37.0	90.0
Effective Green, g (s)	10.0	13.2	90.0	12.0	15.2	90.0	10.8	32.4	90.0	16.4	38.0	90.0
Actuated g/C Ratio	0.11	0.15	1.00	0.13	0.17	1.00	0.12	0.36	1.00	0.18	0.42	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	348	473	1443	417	545	1443	376	1669	1443	570	1957	1443
v/s Ratio Prot	0.09	0.08		c0.12	c0.09		c0.10	c0.31		c0.13	0.25	
v/s Ratio Perm			0.24			0.24			c0.35			0.17
v/c Ratio	0.85	0.53	0.24	0.90	0.52	0.24	0.82	0.87	0.35	0.72	0.60	0.17
Uniform Delay, d1	39.3	35.5	0.0	38.4	34.1	0.0	38.6	26.9	0.0	34.6	20.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.10	1.00
Incremental Delay, d2	17.1	1.1	0.4	21.5	0.9	0.4	12.8	6.6	0.7	4.2	1.3	0.2
Delay (s)	56.4	36.6	0.4	59.9	35.0	0.4	51.5	33.4	0.7	34.6	23.6	0.2
Level of Service	E	D	A	E	C	A	D	C	A	C	C	A
Approach Delay (s)		28.9			32.2			28.6			23.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	330	270	320	310	370	220
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3252	3353	3252	3353	3252	3252
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3252	3353	3252	3353	3252	3252
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	375	307	364	352	420	250
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	375	307	364	352	420	250
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	7	4	3	8	1	1
Permitted Phases						
Actuated Green, G (s)	6.0	9.0	7.0	10.0	7.0	7.0
Effective Green, g (s)	10.0	13.0	11.0	14.0	11.0	11.0
Actuated g/C Ratio	0.24	0.32	0.27	0.34	0.27	0.27
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)	793	1063	872	1145	872	872
v/s Ratio Prot	c0.12	0.09	0.11	c0.10	c0.13	0.08
v/s Ratio Perm						
v/c Ratio	0.47	0.29	0.42	0.31	0.48	0.29
Uniform Delay, d1	13.2	10.5	12.4	9.9	12.6	11.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2	0.3	0.2	0.4	0.2
Delay (s)	13.7	10.7	12.7	10.1	13.0	12.1
Level of Service	B	B	B	B	B	B
Approach Delay (s)		12.3		11.4		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	40.1%	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)	200	70	560	210	50	80	370	1380	220	130	830	230
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	6.0	5.0	4.0	2.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1676	1698	1500	1613	1698	1443	3252	4818	1443	1613	4818	1500
Flt Permitted	0.61	1.00	1.00	0.70	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1069	1698	1500	1197	1698	1443	3252	4818	1443	1613	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	227	80	636	239	57	91	420	1568	250	148	943	261
RTOR Reduction (vph)	0	0	0	0	0	83	0	0	158	0	0	0
Lane Group Flow (vph)	227	80	636	239	57	8	420	1568	93	148	943	261
Heavy Vehicles (%)	2%	6%	2%	6%	6%	6%	2%	2%	6%	6%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8			2			Free
Actuated Green, G (s)	23.5	9.1	90.0	20.3	7.5	7.5	16.4	33.3	33.3	13.8	30.7	90.0
Effective Green, g (s)	25.5	9.1	90.0	20.3	7.5	7.5	17.4	35.3	33.3	13.8	32.7	90.0
Actuated g/C Ratio	0.28	0.10	1.00	0.23	0.08	0.08	0.19	0.39	0.37	0.15	0.36	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	6.0	6.0	5.0	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)	407	172	1500	329	142	120	629	1890	534	247	1751	1500
v/s Ratio Prot	0.10	0.05		c0.10	0.03		c0.13	c0.33		0.09	0.20	
v/s Ratio Perm	c0.06		c0.42	0.06		0.01			0.06			0.17
v/c Ratio	0.56	0.47	0.42	0.73	0.40	0.06	0.67	0.83	0.17	0.60	0.54	0.17
Uniform Delay, d1	26.7	38.2	0.0	31.7	39.1	38.0	33.6	24.6	19.1	35.5	22.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.76	0.99	1.61	1.00	1.00	1.00
Incremental Delay, d2	1.7	2.0	0.9	7.8	1.9	0.2	2.4	4.0	0.6	3.9	1.2	0.3
Delay (s)	28.4	40.1	0.9	39.4	41.0	38.2	28.0	28.3	31.3	39.4	23.9	0.3
Level of Service	C	D	A	D	D	D	C	C	C	D	C	A
Approach Delay (s)		10.8			39.4			28.6			21.0	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.4%	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)	150	0	610	300	0	70	650	650	360	70	280	130
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0		4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00		1.00	1.00		1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613		1443	1613		1443	3130	3226	1443	1613	3226	1443
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1613		1443	1613		1443	3130	3226	1443	1613	3226	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	170	0	693	341	0	80	739	739	409	80	318	148
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	170	0	693	341	0	80	739	739	409	80	318	148
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7			3			5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	18.0		65.0	18.0		65.0	15.0	25.0	65.0	7.0	17.0	65.0
Effective Green, g (s)	18.0		65.0	18.0		65.0	15.0	25.0	65.0	7.0	17.0	65.0
Actuated g/C Ratio	0.28		1.00	0.28		1.00	0.23	0.38	1.00	0.11	0.26	1.00
Clearance Time (s)	5.0			5.0			5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	447		1443	447		1443	722	1241	1443	174	844	1443
v/s Ratio Prot	0.11			c0.21			c0.24	c0.23		0.05	0.10	
v/s Ratio Perm			0.48			0.06			0.28			0.10
v/c Ratio	0.38		0.48	0.76		0.06	1.02	0.60	0.28	0.46	0.38	0.10
Uniform Delay, d1	19.0		0.0	21.5		0.0	25.0	16.0	0.0	27.2	19.7	0.0
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	2.4		1.1	11.7		0.1	39.6	2.1	0.5	8.5	1.3	0.1
Delay (s)	21.4		1.1	33.2		0.1	64.6	18.1	0.5	35.7	20.9	0.1
Level of Service	C		A	C		A	E	B	A	D	C	A
Approach Delay (s)		5.1			26.9			32.5			17.5	
Approach LOS		A			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBL	WBT	NBL	SBL
Lane Configurations						
Volume (vph)	560	690	250	780	260	790
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.97	0.91	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3252	3353	3252	4818	3252	3252
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3252	3353	3252	4818	3252	3252
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	636	784	284	886	295	898
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	636	784	284	886	295	898
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	5	2	1	6	3	7
Permitted Phases						
Actuated Green, G (s)	9.0	19.0	6.0	16.0	16.0	16.0
Effective Green, g (s)	13.0	23.0	10.0	20.0	20.0	20.0
Actuated g/C Ratio	0.20	0.35	0.15	0.31	0.31	0.31
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	650	1186	500	1482	1001	1001
v/s Ratio Prot	c0.20	c0.23	0.09	0.18	0.09	c0.28
v/s Ratio Perm						
v/c Ratio	0.98	0.66	0.57	0.60	0.29	0.90
Uniform Delay, d1	25.9	17.7	25.5	19.1	17.1	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.6	2.9	1.5	1.8	0.2	10.5
Delay (s)	55.4	20.6	27.0	20.9	17.3	32.0
Level of Service	E	C	C	C	B	C
Approach Delay (s)		36.2		22.4		
Approach LOS		D		C		

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	1703	10	15	1817	18	5	0	4	3	1	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	110	1935	11	17	2065	20	6	0	5	3	1	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					906							
pX, platoon unblocked	0.69						0.69	0.69		0.69	0.69	0.69
vC, conflicting volume	2085			1947			2916	4281	651	2979	4276	698
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1017			1947			2216	4184	651	2307	4177	0
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	76			94			0	100	99	67	0	96
cM capacity (veh/h)	454			282			0	1	402	10	1	743

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	SB 2
Volume Total	110	774	774	398	17	826	826	433	6	5	3	33
Volume Left	110	0	0	0	17	0	0	0	6	0	3	0
Volume Right	0	0	0	11	0	0	0	20	0	5	0	32
cSH	454	1700	1700	1700	282	1700	1700	1700	0	402	10	27
Volume to Capacity	0.24	0.46	0.46	0.23	0.06	0.49	0.49	0.25	Err	0.01	0.33	1.23
Queue Length 95th (ft)	24	0	0	0	5	0	0	0	Err	1	19	98
Control Delay (s)	15.5	0.0	0.0	0.0	18.6	0.0	0.0	0.0	Err	14.1	473.6	467.4
Lane LOS	C				C				F	B	F	F
Approach Delay (s)	0.8				0.2				Err		468.0	
Approach LOS									F		F	

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	1420	70	90	1570	390	50	10	190	310	20	230
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0		5.0	4.0	2.0	5.0	5.0	4.0	4.0	5.0	3.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4775		3130	4818	1500	1613	1698	1443	3252	1698	1500
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4775		3130	4818	1500	1613	1698	1443	3252	1698	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	364	1614	80	102	1784	443	57	11	216	352	23	261
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	364	1689	0	102	1784	443	57	11	216	352	23	261
Heavy Vehicles (%)	2%	2%	6%	6%	2%	2%	6%	6%	6%	2%	6%	2%
Turn Type	Prot			Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free			Free			Free
Actuated Green, G (s)	16.1	49.3		7.1	40.3	90.0	6.4	1.5	90.0	11.1	6.2	90.0
Effective Green, g (s)	17.1	51.3		7.1	42.3	90.0	6.4	1.5	90.0	12.1	6.2	90.0
Actuated g/C Ratio	0.19	0.57		0.08	0.47	1.00	0.07	0.02	1.00	0.13	0.07	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	618	2722		247	2264	1500	115	28	1443	437	117	1500
v/s Ratio Prot	c0.11	0.35		0.03	c0.37		0.04	0.01		c0.11	0.01	
v/s Ratio Perm						c0.30			0.15			0.17
v/c Ratio	0.59	0.62		0.41	0.79	0.30	0.50	0.39	0.15	0.81	0.20	0.17
Uniform Delay, d1	33.2	12.9		39.5	20.1	0.0	40.2	43.8	0.0	37.8	39.5	0.0
Progression Factor	1.00	1.00		0.74	1.11	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	1.1		0.6	1.5	0.3	3.3	8.9	0.2	10.4	0.8	0.3
Delay (s)	34.7	13.9		29.7	23.8	0.3	43.6	52.7	0.2	48.2	40.4	0.3
Level of Service	C	B		C	C	A	D	D	A	D	D	A
Approach Delay (s)		17.6			19.6			11.0			28.2	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	230	1520	170	190	1630	280	170	40	240	350	40	250
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	261	1727	193	216	1852	318	193	45	273	398	45	284
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	261	1727	193	216	1852	318	193	45	273	398	45	284
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.0	34.0	90.0	7.0	34.0	90.0	9.4	17.0	90.0	12.0	19.6	90.0
Effective Green, g (s)	8.0	36.0	90.0	8.0	36.0	90.0	9.4	18.0	90.0	12.0	20.6	90.0
Actuated g/C Ratio	0.09	0.40	1.00	0.09	0.40	1.00	0.10	0.20	1.00	0.13	0.23	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	289	1927	1500	289	1927	1500	340	671	1500	434	767	1500
v/s Ratio Prot	c0.08	0.36		0.07	c0.38		0.06	0.01		c0.12	0.01	
v/s Ratio Perm			0.13			c0.21			0.18			0.19
v/c Ratio	0.90	0.90	0.13	0.75	0.96	0.21	0.57	0.07	0.18	0.92	0.06	0.19
Uniform Delay, d1	40.6	25.3	0.0	40.0	26.3	0.0	38.4	29.2	0.0	38.5	27.1	0.0
Progression Factor	0.89	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.6	6.0	0.1	10.1	13.2	0.3	2.2	0.2	0.3	23.9	0.1	0.3
Delay (s)	61.8	33.4	0.1	50.1	39.5	0.3	40.5	29.4	0.3	62.4	27.3	0.3
Level of Service	E	C	A	D	D	A	D	C	A	E	C	A
Approach Delay (s)		33.9			35.2			18.0			36.0	
Approach LOS		C			D			B			D	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	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)	230	1730	150	150	1570	220	210	20	110	180	20	320
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.97	0.91	1.00	0.97	0.91	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	0.87		1.00	0.86	
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)	3252	4818	1500	3252	4818	1500	1676	2928		1676	2880	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.40	1.00		0.66	1.00	
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	711	2928		1161	2880	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	261	1966	170	170	1784	250	239	23	125	205	23	364
RTOR Reduction (vph)	0	0	98	0	0	150	0	97	0	0	110	0
Lane Group Flow (vph)	261	1966	72	170	1784	100	239	51	0	205	277	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	6.0	32.0	32.0	4.0	30.0	30.0	24.0	17.0		24.0	17.0	
Effective Green, g (s)	7.0	34.0	34.0	5.0	32.0	32.0	24.0	18.0		24.0	18.0	
Actuated g/C Ratio	0.09	0.42	0.42	0.06	0.40	0.40	0.30	0.22		0.30	0.22	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	285	2048	638	203	1927	600	298	659		393	648	
v/s Ratio Prot	c0.08	c0.41		0.05	0.37		c0.07	0.02		0.05	0.10	
v/s Ratio Perm			0.05			0.07	c0.17			0.11		
v/c Ratio	0.92	0.96	0.11	0.84	0.93	0.17	0.80	0.08		0.52	0.43	
Uniform Delay, d1	36.2	22.3	13.9	37.1	22.9	15.4	24.1	24.5		22.3	26.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.72		1.00	1.00	
Incremental Delay, d2	31.9	12.5	0.4	24.8	9.1	0.6	14.3	0.2		1.3	2.1	
Delay (s)	68.1	34.8	14.3	61.9	32.0	16.0	35.7	17.9		23.6	28.6	
Level of Service	E	C	B	E	C	B	D	B		C	C	
Approach Delay (s)		37.0			32.5			28.9			26.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	370	1170	480	500	1210	380	420	120	470	350	120	310
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	420	1330	545	568	1375	432	477	136	534	398	136	352
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	420	1330	545	568	1375	432	477	136	534	398	136	352
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.0	23.0	90.0	15.0	27.0	90.0	14.0	18.4	90.0	13.6	18.0	90.0
Effective Green, g (s)	12.0	25.0	90.0	16.0	29.0	90.0	14.0	19.4	90.0	13.6	19.0	90.0
Actuated g/C Ratio	0.13	0.28	1.00	0.18	0.32	1.00	0.16	0.22	1.00	0.15	0.21	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	434	1338	1500	578	1552	1500	506	723	1500	491	708	1500
v/s Ratio Prot	0.13	c0.28		c0.17	0.29		c0.15	0.04		0.12	0.04	
v/s Ratio Perm			c0.36			0.29			0.36			0.23
v/c Ratio	0.97	0.99	0.36	0.98	0.89	0.29	0.94	0.19	0.36	0.81	0.19	0.23
Uniform Delay, d1	38.8	32.4	0.0	36.9	28.9	0.0	37.6	28.9	0.0	37.0	29.2	0.0
Progression Factor	1.00	1.00	1.00	1.28	0.58	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.5	23.2	0.7	22.8	4.3	0.3	26.2	0.6	0.7	9.8	0.6	0.4
Delay (s)	73.3	55.6	0.7	69.8	21.0	0.3	63.8	29.4	0.7	46.7	29.8	0.4
Level of Service	E	E	A	E	C	A	E	C	A	D	C	A
Approach Delay (s)		45.8			28.9			30.3			25.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	34.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	560	890	540	560	900	590	580	410	610	640	420	610
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	636	1011	614	636	1023	670	659	466	693	727	477	693
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	636	1011	614	636	1023	670	659	466	693	727	477	693
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	16.0	17.0	90.0	16.0	17.0	90.0	19.0	17.0	90.0	20.0	18.0	90.0
Effective Green, g (s)	17.0	19.0	90.0	17.0	19.0	90.0	19.0	18.0	90.0	20.0	19.0	90.0
Actuated g/C Ratio	0.19	0.21	1.00	0.19	0.21	1.00	0.21	0.20	1.00	0.22	0.21	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	614	1017	1500	614	1017	1500	687	671	1500	723	708	1500
v/s Ratio Prot	c0.20	0.21		0.20	c0.21		0.20	0.14		c0.22	c0.14	
v/s Ratio Perm			0.41			0.45			c0.46			0.46
v/c Ratio	1.04	0.99	0.41	1.04	1.01	0.45	0.96	0.69	0.46	1.01	0.67	0.46
Uniform Delay, d1	36.5	35.4	0.0	36.5	35.5	0.0	35.1	33.4	0.0	35.0	32.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.9	26.8	0.8	45.9	29.7	1.0	24.4	5.8	1.0	34.8	5.1	1.0
Delay (s)	82.4	62.3	0.8	82.4	65.2	1.0	59.5	39.3	1.0	69.8	37.7	1.0
Level of Service	F	E	A	F	E	A	E	D	A	E	D	A
Approach Delay (s)		51.3			51.4			32.0			36.6	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	43.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	1410	370	300	1350	290	350	70	300	290	70	350
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	409	1602	420	341	1534	330	398	80	341	330	80	398
RTOR Reduction (vph)	0	0	238	0	0	196	0	0	0	0	0	0
Lane Group Flow (vph)	409	1602	182	341	1534	134	398	80	341	330	80	398
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			Free			Free
Actuated Green, G (s)	11.1	32.3	32.3	9.0	30.2	30.2	12.0	6.0	79.3	12.0	6.0	79.3
Effective Green, g (s)	12.1	34.3	34.3	10.0	32.2	32.2	12.0	7.0	79.3	12.0	7.0	79.3
Actuated g/C Ratio	0.15	0.43	0.43	0.13	0.41	0.41	0.15	0.09	1.00	0.15	0.09	1.00
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	496	2084	649	410	1956	609	492	296	1500	492	296	1500
v/s Ratio Prot	c0.13	c0.33		0.10	0.32		c0.12	0.02		0.10	0.02	
v/s Ratio Perm			0.12			0.09			0.23			c0.27
v/c Ratio	0.82	0.77	0.28	0.83	0.78	0.22	0.81	0.27	0.23	0.67	0.27	0.27
Uniform Delay, d1	32.6	19.1	14.5	33.8	20.5	15.4	32.5	33.8	0.0	31.8	33.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.7	2.8	1.1	13.4	3.2	0.8	9.5	0.5	0.4	3.6	0.5	0.4
Delay (s)	43.3	21.9	15.6	47.2	23.8	16.2	42.0	34.3	0.4	35.4	34.3	0.4
Level of Service	D	C	B	D	C	B	D	C	A	D	C	A
Approach Delay (s)		24.4			26.3			23.9			18.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

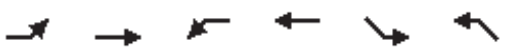
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	1350	390	420	1320	270	380	60	410	200	60	240
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	295	1534	443	477	1500	307	432	68	466	227	68	273
RTOR Reduction (vph)	0	0	276	0	0	176	0	0	0	0	0	0
Lane Group Flow (vph)	295	1534	167	477	1500	131	432	68	466	227	68	273
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			Free			Free
Actuated Green, G (s)	9.0	28.1	28.1	13.1	32.2	32.2	12.9	7.6	79.9	11.1	5.8	79.9
Effective Green, g (s)	10.0	30.1	30.1	14.1	34.2	34.2	12.9	8.6	79.9	11.1	6.8	79.9
Actuated g/C Ratio	0.13	0.38	0.38	0.18	0.43	0.43	0.16	0.11	1.00	0.14	0.09	1.00
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	407	1815	565	574	2062	642	525	361	1500	452	285	1500
v/s Ratio Prot	0.09	c0.32		c0.15	0.31		c0.13	0.02		0.07	0.02	
v/s Ratio Perm			0.11			0.09			c0.31			0.18
v/c Ratio	0.72	0.85	0.30	0.83	0.73	0.20	0.82	0.19	0.31	0.50	0.24	0.18
Uniform Delay, d1	33.6	22.8	17.5	31.8	19.0	14.3	32.4	32.5	0.0	31.8	34.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	5.0	1.3	9.9	2.3	0.7	10.1	0.3	0.5	0.9	0.4	0.3
Delay (s)	39.9	27.8	18.8	41.7	21.3	15.0	42.5	32.7	0.5	32.7	34.6	0.3
Level of Service	D	C	B	D	C	B	D	C	A	C	C	A
Approach Delay (s)		27.6			24.7			21.6			17.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
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)	290	180	230	580	200	730	280	1070	610	910	1200	420
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.94	0.95	1.00	0.94	0.95	1.00	0.94	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4549	3226	1443	4549	3226	1443	4549	4636	1443	4549	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4549	3226	1443	4549	3226	1443	4549	4636	1443	4549	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	330	205	261	659	227	830	318	1216	693	1034	1364	477
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	330	205	261	659	227	830	318	1216	693	1034	1364	477
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.8	17.1	90.0	16.9	22.2	90.0	7.0	19.0	90.0	17.0	29.0	90.0
Effective Green, g (s)	11.8	18.1	90.0	16.9	23.2	90.0	8.0	21.0	90.0	18.0	31.0	90.0
Actuated g/C Ratio	0.13	0.20	1.00	0.19	0.26	1.00	0.09	0.23	1.00	0.20	0.34	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	596	649	1443	854	832	1443	404	1082	1443	910	1597	1443
v/s Ratio Prot	0.07	0.06		c0.14	0.07		0.07	c0.26		c0.23	0.29	
v/s Ratio Perm			0.18			c0.58			0.48			0.33
v/c Ratio	0.55	0.32	0.18	0.77	0.27	0.58	0.79	1.12	0.48	1.14	0.85	0.33
Uniform Delay, d1	36.6	30.7	0.0	34.7	26.7	0.0	40.2	34.5	0.0	36.0	27.4	0.0
Progression Factor	0.96	1.04	1.00	0.95	1.34	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	1.3	0.3	2.8	0.5	1.1	9.7	68.1	1.1	74.8	6.0	0.6
Delay (s)	36.3	33.3	0.3	35.7	36.3	1.1	49.9	102.6	1.1	110.8	33.4	0.6
Level of Service	D	C	A	D	D	A	D	F	A	F	C	A
Approach Delay (s)		23.7			19.0			63.5			55.8	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	46.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	770	570	760	570	730	550
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.94	0.95	0.94	0.95	0.94	0.94
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	4549	3226	4549	3226	4549	4549
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	4549	3226	4549	3226	4549	4549
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	875	648	864	648	830	625
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	875	648	864	648	830	625
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	7	4	3	8	1	5
Permitted Phases						
Actuated Green, G (s)	11.9	14.5	11.9	14.5	11.8	11.8
Effective Green, g (s)	12.9	15.5	12.9	15.5	12.8	12.8
Actuated g/C Ratio	0.24	0.29	0.24	0.29	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1103	940	1103	940	1094	1094
v/s Ratio Prot	c0.19	c0.20	0.19	0.20	c0.18	0.14
v/s Ratio Perm						
v/c Ratio	0.79	0.69	0.78	0.69	0.76	0.57
Uniform Delay, d1	18.9	16.7	18.8	16.7	18.8	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	2.1	3.7	2.1	3.1	0.7
Delay (s)	22.9	18.8	22.5	18.8	21.8	18.5
Level of Service	C	B	C	B	C	B
Approach Delay (s)		21.2		21.0		
Approach LOS		C		C		

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	53.2	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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	40	250	320	40	320	280	1900	360	360	1900	290
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	284	45	284	364	45	364	318	2159	409	409	2159	330
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	284	45	284	364	45	364	318	2159	409	409	2159	330
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.0	5.9	110.0	13.0	5.9	110.0	17.9	49.8	110.0	21.3	53.2	110.0
Effective Green, g (s)	13.0	6.9	110.0	13.0	6.9	110.0	18.9	51.8	110.0	22.3	55.2	110.0
Actuated g/C Ratio	0.12	0.06	1.00	0.12	0.06	1.00	0.17	0.47	1.00	0.20	0.50	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	370	202	1443	370	202	1443	538	2183	1443	635	2326	1443
v/s Ratio Prot	0.09	0.01		c0.12	0.01		0.10	c0.47		c0.13	0.47	
v/s Ratio Perm			0.20			0.25			c0.28			0.23
v/c Ratio	0.77	0.22	0.20	0.98	0.22	0.25	0.59	0.99	0.28	0.64	0.93	0.23
Uniform Delay, d1	47.0	49.0	0.0	48.4	49.0	0.0	42.0	28.8	0.0	40.2	25.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	1.09	1.00
Incremental Delay, d2	9.2	0.6	0.3	42.2	0.6	0.4	1.7	16.8	0.5	1.1	4.4	0.2
Delay (s)	56.2	49.6	0.3	90.6	49.6	0.4	43.7	45.7	0.5	33.6	32.2	0.2
Level of Service	E	D	A	F	D	A	D	D	A	C	C	A
Approach Delay (s)		29.8			45.7			39.0			28.7	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	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)	290	30	200	200	30	290	220	2030	220	260	2150	260
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	1698	1443	3130	1698	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	1698	1443	3130	1698	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	330	34	227	227	34	330	250	2307	250	295	2443	295
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	100	0	0	110
Lane Group Flow (vph)	330	34	227	227	34	330	250	2307	150	295	2443	185
Turn Type	Prot		Free	Prot		Free	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Actuated Green, G (s)	11.0	5.3	110.0	11.0	5.3	110.0	14.6	57.1	57.1	16.6	59.1	59.1
Effective Green, g (s)	12.0	6.3	110.0	12.0	6.3	110.0	15.6	58.1	58.1	17.6	60.1	60.1
Actuated g/C Ratio	0.11	0.06	1.00	0.11	0.06	1.00	0.14	0.53	0.53	0.16	0.55	0.55
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
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)	341	97	1443	341	97	1443	444	2449	762	501	2533	788
v/s Ratio Prot	c0.11	0.02		0.07	0.02		0.08	0.50		c0.09	c0.53	
v/s Ratio Perm			0.16			c0.23			0.10			0.13
v/c Ratio	0.97	0.35	0.16	0.67	0.35	0.23	0.56	0.94	0.20	0.59	0.96	0.24
Uniform Delay, d1	48.8	49.9	0.0	47.1	49.9	0.0	44.0	24.4	13.7	42.8	23.9	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.09	2.75	0.68	1.50	3.65
Incremental Delay, d2	39.7	2.2	0.2	4.8	2.2	0.4	0.8	4.9	0.3	0.8	6.5	0.3
Delay (s)	88.5	52.1	0.2	51.9	52.1	0.4	34.7	31.5	37.9	30.1	42.2	47.7
Level of Service	F	D	A	D	D	A	C	C	D	C	D	D
Approach Delay (s)		52.5			23.1			32.4			41.6	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	37.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	670	90	630	240	80	240	590	1780	240	230	1800	570
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.94	0.95	1.00	0.94	0.95	1.00	0.94	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4728	3353	1500	4728	3353	1500	4728	4818	1500	4728	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4728	3353	1500	4728	3353	1500	4728	4818	1500	4728	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	761	102	716	273	91	273	670	2023	273	261	2045	648
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	761	102	716	273	91	273	670	2023	273	261	2045	648
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	16.8	15.0	110.0	8.9	7.1	110.0	21.4	53.9	110.0	11.2	43.7	110.0
Effective Green, g (s)	17.8	16.0	110.0	9.9	8.1	110.0	22.4	55.9	110.0	12.2	45.7	110.0
Actuated g/C Ratio	0.16	0.15	1.00	0.09	0.07	1.00	0.20	0.51	1.00	0.11	0.42	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	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)	765	488	1500	426	247	1500	963	2448	1500	524	2002	1500
v/s Ratio Prot	c0.16	0.03		0.06	0.03		c0.14	c0.42		0.06	c0.42	
v/s Ratio Perm			c0.48			0.18			0.18			0.43
v/c Ratio	0.99	0.21	0.48	0.64	0.37	0.18	0.70	0.83	0.18	0.50	1.02	0.43
Uniform Delay, d1	46.1	41.4	0.0	48.3	48.5	0.0	40.6	22.9	0.0	46.0	32.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.71	1.55	1.00	1.00	1.00	1.00
Incremental Delay, d2	31.0	0.2	1.1	3.3	0.9	0.3	1.1	1.8	0.1	0.7	25.7	0.9
Delay (s)	77.1	41.6	1.1	51.6	49.4	0.3	29.8	37.3	0.1	46.8	57.9	0.9
Level of Service	E	D	A	D	D	A	C	D	A	D	E	A
Approach Delay (s)		40.3			29.3			32.2			44.4	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	38.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	10	530	110	10	40	380	2230	80	60	1960	270
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	1765	1500	3252	1765	1500	3252	4818	1500	1676	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	1765	1500	3252	1765	1500	3252	4818	1500	1676	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	227	11	602	125	11	45	432	2534	91	68	2227	307
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	227	11	602	125	11	45	432	2534	91	68	2227	307
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.0	1.5	90.0	6.0	1.5	90.0	19.8	54.2	90.0	8.3	42.7	90.0
Effective Green, g (s)	6.0	2.5	90.0	6.0	2.5	90.0	20.8	56.2	90.0	9.3	44.7	90.0
Actuated g/C Ratio	0.07	0.03	1.00	0.07	0.03	1.00	0.23	0.62	1.00	0.10	0.50	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	217	49	1500	217	49	1500	752	3009	1500	173	2393	1500
v/s Ratio Prot	c0.07	0.01		0.04	0.01		c0.13	c0.53		0.04	c0.46	
v/s Ratio Perm			c0.40			0.03			0.06			0.20
v/c Ratio	1.05	0.22	0.40	0.58	0.22	0.03	0.57	0.84	0.06	0.39	0.93	0.20
Uniform Delay, d1	42.0	42.8	0.0	40.8	42.8	0.0	30.7	13.4	0.0	37.7	21.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	73.7	2.3	0.8	3.7	2.3	0.0	1.1	3.1	0.1	1.5	8.0	0.3
Delay (s)	115.7	45.1	0.8	44.4	45.1	0.0	31.7	16.4	0.1	39.2	29.2	0.3
Level of Service	F	D	A	D	D	A	C	B	A	D	C	A
Approach Delay (s)		32.4			33.4			18.1			26.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	520	410	680	720	410	550	730	960	780	570	890	540
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.94	0.91	1.00	0.94	0.91	1.00	0.94	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4728	4818	1500	4728	4818	1500	4728	4818	1500	4728	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4728	4818	1500	4728	4818	1500	4728	4818	1500	4728	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	591	466	773	818	466	625	830	1091	886	648	1011	614
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	591	466	773	818	466	625	830	1091	886	648	1011	614
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.7	12.9	80.0	13.0	13.2	80.0	16.3	19.7	80.0	13.4	16.8	80.0
Effective Green, g (s)	13.7	13.9	80.0	14.0	14.2	80.0	17.3	21.7	80.0	14.4	18.8	80.0
Actuated g/C Ratio	0.17	0.17	1.00	0.18	0.18	1.00	0.22	0.27	1.00	0.18	0.24	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	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)	810	837	1500	827	855	1500	1022	1307	1500	851	1132	1500
v/s Ratio Prot	0.13	0.10		c0.17	0.10		c0.18	c0.23		0.14	0.21	
v/s Ratio Perm			0.52			0.42			c0.59			0.41
v/c Ratio	0.73	0.56	0.52	0.99	0.55	0.42	0.81	0.83	0.59	0.76	0.89	0.41
Uniform Delay, d1	31.4	30.2	0.0	32.9	30.0	0.0	29.8	27.5	0.0	31.2	29.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.8	1.3	28.3	0.7	0.9	5.0	6.4	1.7	4.1	10.8	0.8
Delay (s)	34.7	31.0	1.3	61.2	30.7	0.9	34.8	33.9	1.7	35.2	40.5	0.8
Level of Service	C	C	A	E	C	A	C	C	A	D	D	A
Approach Delay (s)		19.7			34.0			24.0			28.3	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	230	60	180	360	60	460	220	1380	430	450	1460	230
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	3353	1500	3252	3353	1500	3252	4818	1500	3252	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	3353	1500	3252	3353	1500	3252	4818	1500	3252	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	261	68	205	409	68	523	250	1568	489	511	1659	261
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	261	68	205	409	68	523	250	1568	489	511	1659	261
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.8	6.1	90.0	12.0	6.3	90.0	12.3	32.0	90.0	19.9	39.6	90.0
Effective Green, g (s)	11.8	7.1	90.0	12.0	7.3	90.0	13.3	34.0	90.0	20.9	41.6	90.0
Actuated g/C Ratio	0.13	0.08	1.00	0.13	0.08	1.00	0.15	0.38	1.00	0.23	0.46	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	426	265	1500	434	272	1500	481	1820	1500	755	2227	1500
v/s Ratio Prot	0.08	0.02		c0.13	0.02		0.08	c0.33		c0.16	0.34	
v/s Ratio Perm			0.14			c0.35			0.33			0.17
v/c Ratio	0.61	0.26	0.14	0.94	0.25	0.35	0.52	0.86	0.33	0.68	0.74	0.17
Uniform Delay, d1	36.9	39.0	0.0	38.7	38.8	0.0	35.4	25.8	0.0	31.5	19.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.5	0.2	29.0	0.5	0.6	1.0	5.6	0.6	2.4	2.3	0.3
Delay (s)	39.5	39.5	0.2	67.6	39.3	0.6	36.4	31.5	0.6	33.9	22.2	0.3
Level of Service	D	D	A	E	D	A	D	C	A	C	C	A
Approach Delay (s)		24.4			30.7			25.5			22.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	450	110	400	340	110	380	380	1360	330	410	1400	470
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	2.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3353	1500	3252	3353	1443	3252	4636	1500	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3353	1500	3252	3353	1443	3252	4636	1500	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	511	125	455	386	125	432	432	1545	375	466	1591	534
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	511	125	455	386	125	432	432	1545	375	466	1591	534
Heavy Vehicles (%)	6%	2%	2%	2%	2%	6%	2%	6%	2%	6%	6%	6%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.0	10.9	90.0	11.8	8.7	90.0	17.3	27.3	90.0	19.0	30.0	90.0
Effective Green, g (s)	15.0	11.9	90.0	12.8	9.7	90.0	18.3	29.3	90.0	20.0	31.0	90.0
Actuated g/C Ratio	0.17	0.13	1.00	0.14	0.11	1.00	0.20	0.33	1.00	0.22	0.34	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	522	443	1500	463	361	1443	661	1509	1500	696	1597	1443
v/s Ratio Prot	c0.16	0.04		0.12	0.04		0.13	0.33		c0.15	c0.34	
v/s Ratio Perm			0.30			0.30			0.25			c0.37
v/c Ratio	0.98	0.28	0.30	0.83	0.35	0.30	0.65	1.02	0.25	0.67	1.00	0.37
Uniform Delay, d1	37.3	35.2	0.0	37.6	37.2	0.0	32.9	30.4	0.0	32.0	29.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.72	1.46	1.00	0.82	1.30	1.00
Incremental Delay, d2	33.6	0.4	0.5	12.2	0.6	0.5	1.6	25.7	0.3	1.7	17.7	0.5
Delay (s)	70.9	35.6	0.5	49.8	37.8	0.5	25.3	69.9	0.3	27.8	55.9	0.5
Level of Service	E	D	A	D	D	A	C	E	A	C	E	A
Approach Delay (s)		37.5			25.6			50.6			39.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

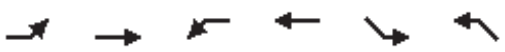
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	10	80	140	10	140	50	2060	80	100	2060	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	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	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613	3226	1443	1613	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1698	3226	1443	1698	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	91	11	91	159	11	159	57	2341	91	114	2341	68
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	34	0	0	23
Lane Group Flow (vph)	91	11	91	159	11	159	57	2341	57	114	2341	45
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			6
Actuated Green, G (s)	5.3	1.3	90.0	7.9	2.6	90.0	5.9	54.6	54.6	8.8	57.5	57.5
Effective Green, g (s)	5.3	2.3	90.0	7.9	3.6	90.0	6.9	56.6	56.6	9.8	59.5	59.5
Actuated g/C Ratio	0.06	0.03	1.00	0.09	0.04	1.00	0.08	0.63	0.63	0.11	0.66	0.66
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0	6.0	5.0	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)	96	82	1443	144	129	1443	240	2916	907	341	3065	954
v/s Ratio Prot	0.04	0.00		c0.06	0.00		0.02	c0.50		c0.04	0.50	
v/s Ratio Perm	0.01		0.06	c0.03		c0.11			0.04			0.03
v/c Ratio	0.95	0.13	0.06	1.10	0.09	0.11	0.24	0.80	0.06	0.33	0.76	0.05
Uniform Delay, d1	42.2	42.9	0.0	41.3	41.6	0.0	39.1	12.5	6.5	37.1	10.4	5.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	74.1	0.7	0.1	105.7	0.3	0.2	0.5	2.4	0.1	0.6	1.9	0.1
Delay (s)	116.3	43.6	0.1	147.0	41.9	0.2	39.6	15.0	6.6	37.7	12.3	5.4
Level of Service	F	D	A	F	D	A	D	B	A	D	B	A
Approach Delay (s)		57.4			72.5			15.2			13.3	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.7%	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)	320	100	310	450	100	470	350	1440	490	480	1460	350
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	364	114	352	511	114	534	398	1636	557	545	1659	398
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	364	114	352	511	114	534	398	1636	557	545	1659	398
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.0	8.9	100.0	15.0	10.9	100.0	17.9	33.3	100.0	22.8	38.2	100.0
Effective Green, g (s)	14.0	9.9	100.0	16.0	11.9	100.0	18.9	34.3	100.0	23.8	39.2	100.0
Actuated g/C Ratio	0.14	0.10	1.00	0.16	0.12	1.00	0.19	0.34	1.00	0.24	0.39	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	438	319	1443	501	384	1443	592	1590	1443	745	1817	1443
v/s Ratio Prot	0.12	0.04		c0.16	0.04		0.13	c0.35		c0.17	0.36	
v/s Ratio Perm			0.24			0.37			c0.39			0.28
v/c Ratio	0.83	0.36	0.24	1.02	0.30	0.37	0.67	1.03	0.39	0.73	0.91	0.28
Uniform Delay, d1	41.8	42.1	0.0	42.0	40.2	0.0	37.7	32.9	0.0	35.2	28.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.6	0.7	0.4	45.3	0.4	0.7	3.0	30.3	0.8	3.7	8.5	0.5
Delay (s)	54.5	42.8	0.4	87.3	40.7	0.7	40.7	63.2	0.8	38.9	37.3	0.5
Level of Service	D	D	A	F	D	A	D	E	A	D	D	A
Approach Delay (s)		29.9			42.8			46.3			32.0	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	410	140	500	150	440	360
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3252	3353	3252	3353	3252	3252
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3252	3353	3252	3353	3252	3252
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	466	159	568	170	500	409
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	466	159	568	170	500	409
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	7	4	3	8	1	1
Permitted Phases						
Actuated Green, G (s)	9.0	5.8	9.8	6.6	9.0	9.0
Effective Green, g (s)	13.0	9.8	13.8	10.6	13.0	13.0
Actuated g/C Ratio	0.31	0.23	0.32	0.25	0.31	0.31
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)	992	771	1053	834	992	992
v/s Ratio Prot	0.14	0.05	c0.17	c0.05	c0.15	0.13
v/s Ratio Perm						
v/c Ratio	0.47	0.21	0.54	0.20	0.50	0.41
Uniform Delay, d1	12.0	13.3	11.8	12.7	12.2	11.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.5	0.1	0.4	0.3
Delay (s)	12.4	13.4	12.3	12.8	12.6	12.0
Level of Service	B	B	B	B	B	B
Approach Delay (s)		12.6		12.4		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	42.6	Sum of lost time (s)	4.0
Intersection Capacity Utilization	42.4%	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)	240	70	710	310	70	110	600	1480	290	90	1170	190
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	4.0	2.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	1698	1500	3130	1698	1443	3252	4818	1443	3130	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	1698	1500	3130	1698	1443	3252	4818	1443	3130	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	273	80	807	352	80	125	682	1682	330	102	1330	216
RTOR Reduction (vph)	0	0	0	0	0	108	0	0	0	0	0	0
Lane Group Flow (vph)	273	80	807	352	80	17	682	1682	330	102	1330	216
Heavy Vehicles (%)	2%	6%	2%	6%	6%	6%	2%	2%	6%	6%	2%	2%
Turn Type	Prot		Free	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Actuated Green, G (s)	12.7	8.4	90.0	16.2	11.9	11.9	24.1	36.7	90.0	7.7	20.3	90.0
Effective Green, g (s)	13.7	8.4	90.0	16.2	11.9	11.9	25.1	38.7	90.0	7.7	22.3	90.0
Actuated g/C Ratio	0.15	0.09	1.00	0.18	0.13	0.13	0.28	0.43	1.00	0.09	0.25	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	6.0		5.0	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)	495	158	1500	563	225	191	907	2072	1443	268	1194	1500
v/s Ratio Prot	0.08	0.05		0.11	0.05		c0.21	c0.35		0.03	c0.28	
v/s Ratio Perm			c0.54			0.01			0.23			0.14
v/c Ratio	0.55	0.51	0.54	0.63	0.36	0.09	0.75	0.81	0.23	0.38	1.11	0.14
Uniform Delay, d1	35.3	38.8	0.0	34.1	35.6	34.3	29.6	22.5	0.0	38.9	33.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	2.5	1.4	2.2	1.0	0.2	3.6	3.6	0.4	0.9	63.2	0.2
Delay (s)	36.6	41.4	1.4	36.3	36.5	34.5	33.2	26.1	0.4	39.8	97.1	0.2
Level of Service	D	D	A	D	D	C	C	C	A	D	F	A
Approach Delay (s)		12.4			35.9			24.7			80.8	
Approach LOS		B			D			C			F	

Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	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)	200	0	550	370	0	100	670	720	440	100	530	160
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0		4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00		1.00	0.97		1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613		1443	3130		1443	3130	3226	1443	1613	3226	1443
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1613		1443	3130		1443	3130	3226	1443	1613	3226	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	227	0	625	420	0	114	761	818	500	114	602	182
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	227	0	625	420	0	114	761	818	500	114	602	182
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7			3			5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.0		60.0	11.0		60.0	17.0	24.0	60.0	10.0	17.0	60.0
Effective Green, g (s)	11.0		60.0	11.0		60.0	17.0	24.0	60.0	10.0	17.0	60.0
Actuated g/C Ratio	0.18		1.00	0.18		1.00	0.28	0.40	1.00	0.17	0.28	1.00
Clearance Time (s)	5.0			5.0			5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	296		1443	574		1443	887	1290	1443	269	914	1443
v/s Ratio Prot	c0.14			0.13			c0.24	c0.25		0.07	0.19	
v/s Ratio Perm			0.43			0.08			0.35			0.13
v/c Ratio	0.77		0.43	0.73		0.08	0.86	0.63	0.35	0.42	0.66	0.13
Uniform Delay, d1	23.3		0.0	23.1		0.0	20.4	14.5	0.0	22.4	18.9	0.0
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	17.2		0.9	8.0		0.1	10.5	2.4	0.7	4.8	3.7	0.2
Delay (s)	40.5		0.9	31.1		0.1	30.9	16.9	0.7	27.2	22.7	0.2
Level of Service	D		A	C		A	C	B	A	C	C	A
Approach Delay (s)		11.5			24.5			18.1			18.7	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBL	WBT	NBL	SBL
Lane Configurations						
Volume (vph)	630	770	280	870	290	840
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	0.97	0.91	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3252	4818	3252	4818	3252	3252
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3252	4818	3252	4818	3252	3252
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	716	875	318	989	330	955
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	716	875	318	989	330	955
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	5	2	1	6	3	7
Permitted Phases						
Actuated Green, G (s)	14.0	23.0	8.0	17.0	20.0	20.0
Effective Green, g (s)	18.0	27.0	12.0	21.0	24.0	24.0
Actuated g/C Ratio	0.24	0.36	0.16	0.28	0.32	0.32
Clearance Time (s)	8.0	8.0	8.0	8.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	780	1734	520	1349	1041	1041
v/s Ratio Prot	c0.22	0.18	0.10	c0.21	0.10	c0.29
v/s Ratio Perm						
v/c Ratio	0.92	0.50	0.61	0.73	0.32	0.92
Uniform Delay, d1	27.8	18.8	29.3	24.5	19.3	24.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.6	1.1	2.1	3.6	0.2	12.3
Delay (s)	43.3	19.8	31.5	28.0	19.5	36.9
Level of Service	D	B	C	C	B	D
Approach Delay (s)		30.4		28.9		
Approach LOS		C		C		

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	1972	3	4	1962	12	20	0	18	20	1	98
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	40	2241	3	5	2230	14	23	0	20	23	1	111
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					874							
pX, platoon unblocked	0.63						0.63	0.63		0.63	0.63	0.63
vC, conflicting volume	2243			2244			3186	4574	749	3092	4569	750
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	891			2244			2399	4619	749	2249	4611	0
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	91			98			0	100	94	0	0	83
cM capacity (veh/h)	458			214			0	1	346	12	1	670

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	SB 2
Volume Total	40	896	896	452	5	892	892	460	23	20	23	112
Volume Left	40	0	0	0	5	0	0	0	23	0	23	0
Volume Right	0	0	0	3	0	0	0	14	0	20	0	111
cSH	458	1700	1700	1700	214	1700	1700	1700	0	346	12	49
Volume to Capacity	0.09	0.53	0.53	0.27	0.02	0.52	0.52	0.27	Err	0.06	1.95	2.28
Queue Length 95th (ft)	7	0	0	0	2	0	0	0	Err	5	92	289
Control Delay (s)	13.6	0.0	0.0	0.0	22.2	0.0	0.0	0.0	Err	16.1	1089.2	761.4
Lane LOS	B				C				F	C	F	F
Approach Delay (s)	0.2				0.0				Err		816.5	
Approach LOS									F		F	

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	54.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	330	1600	80	110	1760	440	60	20	110	450	20	260
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0		5.0	4.0	2.0	5.0	5.0	4.0	4.0	5.0	3.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4774		3130	4818	1500	1613	1698	1443	3252	1698	1500
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4774		3130	4818	1500	1613	1698	1443	3252	1698	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	375	1818	91	125	2000	500	68	23	125	511	23	295
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	375	1904	0	125	2000	500	68	23	125	511	23	295
Heavy Vehicles (%)	2%	2%	6%	6%	2%	2%	6%	6%	6%	2%	6%	2%
Turn Type	Prot			Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free			Free			Free
Actuated Green, G (s)	17.6	52.2		9.5	44.1	100.0	9.6	3.3	100.0	14.0	7.7	100.0
Effective Green, g (s)	18.6	54.2		9.5	46.1	100.0	9.6	3.3	100.0	15.0	7.7	100.0
Actuated g/C Ratio	0.19	0.54		0.10	0.46	1.00	0.10	0.03	1.00	0.15	0.08	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	605	2588		297	2221	1500	155	56	1443	488	131	1500
v/s Ratio Prot	c0.12	c0.40		0.04	c0.42		0.04	0.01		c0.16	0.01	
v/s Ratio Perm						c0.33			0.09			0.20
v/c Ratio	0.62	0.74		0.42	0.90	0.33	0.44	0.41	0.09	1.05	0.18	0.20
Uniform Delay, d1	37.4	17.4		42.7	24.8	0.0	42.7	47.4	0.0	42.5	43.2	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	1.9		1.0	6.4	0.6	2.0	4.8	0.1	53.6	0.6	0.3
Delay (s)	39.3	19.4		43.6	31.3	0.6	44.6	52.2	0.1	96.1	43.8	0.3
Level of Service	D	B		D	C	A	D	D	A	F	D	A
Approach Delay (s)		22.6			26.0			19.7			60.6	
Approach LOS		C			C			B			E	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.9%	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)	260	1710	190	230	1830	310	200	40	270	400	40	280
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	295	1943	216	261	2080	352	227	45	307	455	45	318
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	295	1943	216	261	2080	352	227	45	307	455	45	318
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.0	36.0	90.0	6.0	35.0	90.0	10.3	16.0	90.0	12.0	17.7	90.0
Effective Green, g (s)	8.0	38.0	90.0	7.0	37.0	90.0	10.3	17.0	90.0	12.0	18.7	90.0
Actuated g/C Ratio	0.09	0.42	1.00	0.08	0.41	1.00	0.11	0.19	1.00	0.13	0.21	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	289	2034	1500	253	1981	1500	372	633	1500	434	697	1500
v/s Ratio Prot	c0.09	0.40		0.08	c0.43		0.07	0.01		c0.14	0.01	
v/s Ratio Perm			0.14			c0.23			0.20			0.21
v/c Ratio	1.02	0.96	0.14	1.03	1.05	0.23	0.61	0.07	0.20	1.05	0.06	0.21
Uniform Delay, d1	41.0	25.2	0.0	41.5	26.5	0.0	37.9	30.0	0.0	39.0	28.6	0.0
Progression Factor	1.00	1.00	1.00	1.23	0.73	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	58.4	11.9	0.2	42.8	28.1	0.1	3.0	0.2	0.3	56.4	0.2	0.3
Delay (s)	99.4	37.1	0.2	93.8	47.6	0.1	40.9	30.2	0.3	95.4	28.8	0.3
Level of Service	F	D	A	F	D	A	D	C	A	F	C	A
Approach Delay (s)		41.3			45.8			18.5			54.8	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM Average Control Delay	42.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	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)	260	1950	170	160	1770	260	230	30	120	200	30	370
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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	0.97	0.91	1.00	0.97	0.91	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	0.88		1.00	0.86	
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)	3252	4818	1500	3252	4818	1500	1676	2951		1676	2888	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.27	1.00		0.64	1.00	
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	479	2951		1137	2888	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	295	2216	193	182	2011	295	261	34	136	227	34	420
RTOR Reduction (vph)	0	0	103	0	0	167	0	107	0	0	102	0
Lane Group Flow (vph)	295	2216	90	182	2011	128	261	63	0	227	352	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	8.0	40.0	40.0	5.0	37.0	37.0	26.0	18.0		24.0	17.0	
Effective Green, g (s)	9.0	42.0	42.0	6.0	39.0	39.0	26.0	19.0		24.0	18.0	
Actuated g/C Ratio	0.10	0.47	0.47	0.07	0.43	0.43	0.29	0.21		0.27	0.20	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	325	2248	700	217	2088	650	245	623		345	578	
v/s Ratio Prot	c0.09	c0.46		0.06	0.42		c0.09	0.02		0.05	0.12	
v/s Ratio Perm			0.06			0.09	c0.21			0.12		
v/c Ratio	0.91	0.99	0.13	0.84	0.96	0.20	1.07	0.10		0.66	1.04dr	
Uniform Delay, d1	40.1	23.7	13.6	41.5	24.8	15.8	29.7	28.6		28.2	32.8	
Progression Factor	1.13	0.59	0.70	1.30	0.60	0.40	1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.8	9.7	0.2	11.4	6.7	0.3	75.8	0.3		4.5	4.7	
Delay (s)	60.1	23.6	9.7	65.2	21.5	6.5	105.5	28.9		32.7	37.5	
Level of Service	E	C	A	E	C	A	F	C		C	D	
Approach Delay (s)		26.6			22.9			75.3			35.9	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

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

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	420	1310	540	560	1360	430	480	140	530	400	130	350
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	477	1489	614	636	1545	489	545	159	602	455	148	398
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	477	1489	614	636	1545	489	545	159	602	455	148	398
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.0	24.0	90.0	15.0	27.0	90.0	14.0	18.0	90.0	13.0	17.0	90.0
Effective Green, g (s)	13.0	26.0	90.0	16.0	29.0	90.0	14.0	19.0	90.0	13.0	18.0	90.0
Actuated g/C Ratio	0.14	0.29	1.00	0.18	0.32	1.00	0.16	0.21	1.00	0.14	0.20	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	470	1392	1500	578	1552	1500	506	708	1500	470	671	1500
v/s Ratio Prot	0.15	0.31		c0.20	c0.32		c0.17	0.05		0.14	0.04	
v/s Ratio Perm			c0.41			0.33			0.40			0.27
v/c Ratio	1.01	1.07	0.41	1.10	1.00	0.33	1.08	0.22	0.40	0.97	0.22	0.27
Uniform Delay, d1	38.5	32.0	0.0	37.0	30.4	0.0	38.0	29.4	0.0	38.3	30.1	0.0
Progression Factor	1.42	0.51	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.6	37.8	0.3	67.9	21.8	0.6	62.3	0.7	0.8	33.0	0.8	0.4
Delay (s)	84.3	54.0	0.3	104.9	52.2	0.6	100.3	30.1	0.8	71.3	30.9	0.4
Level of Service	F	D	A	F	D	A	F	C	A	E	C	A
Approach Delay (s)		46.9			55.3			45.9			37.1	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	630	1000	610	620	1010	680	650	460	680	730	470	690
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	716	1136	693	705	1148	773	739	523	773	830	534	784
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	716	1136	693	705	1148	773	739	523	773	830	534	784
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	23.0	24.0	110.0	22.0	23.0	110.0	26.0	17.0	110.0	27.0	18.0	110.0
Effective Green, g (s)	24.0	26.0	110.0	23.0	25.0	110.0	26.0	18.0	110.0	27.0	19.0	110.0
Actuated g/C Ratio	0.22	0.24	1.00	0.21	0.23	1.00	0.24	0.16	1.00	0.25	0.17	1.00
Clearance Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	710	1139	1500	680	1095	1500	769	549	1500	798	579	1500
v/s Ratio Prot	c0.22	0.24		0.22	c0.24		0.23	0.16		c0.26	c0.16	
v/s Ratio Perm			0.46			0.52			0.52			c0.52
v/c Ratio	1.01	1.00	0.46	1.04	1.05	0.52	0.96	0.95	0.52	1.04	0.92	0.52
Uniform Delay, d1	43.0	42.0	0.0	43.5	42.5	0.0	41.5	45.6	0.0	41.5	44.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.9	26.0	1.0	44.4	40.8	1.3	23.2	28.3	1.3	42.7	22.5	1.3
Delay (s)	78.9	68.0	1.0	87.9	83.3	1.3	64.7	73.9	1.3	84.2	67.2	1.3
Level of Service	E	E	A	F	F	A	E	E	A	F	E	A
Approach Delay (s)		52.8			60.4			43.0			49.7	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	52.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	410	1590	410	340	1520	330	400	80	350	300	80	390
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	466	1807	466	386	1727	375	455	91	398	341	91	443
RTOR Reduction (vph)	0	0	265	0	0	223	0	0	0	0	0	0
Lane Group Flow (vph)	466	1807	201	386	1727	152	455	91	398	341	91	443
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			Free			Free
Actuated Green, G (s)	11.1	32.3	32.3	9.0	30.2	30.2	12.1	6.2	79.6	12.1	6.2	79.6
Effective Green, g (s)	12.1	34.3	34.3	10.0	32.2	32.2	12.1	7.2	79.6	12.1	7.2	79.6
Actuated g/C Ratio	0.15	0.43	0.43	0.13	0.40	0.40	0.15	0.09	1.00	0.15	0.09	1.00
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	494	2076	646	409	1949	607	494	303	1500	494	303	1500
v/s Ratio Prot	c0.14	c0.38		0.12	0.36		c0.14	0.03		0.10	0.03	
v/s Ratio Perm			0.13			0.10			0.27			c0.30
v/c Ratio	0.94	0.87	0.31	0.94	0.89	0.25	0.92	0.30	0.27	0.69	0.30	0.30
Uniform Delay, d1	33.4	20.6	14.9	34.5	22.0	15.7	33.3	33.8	0.0	32.0	33.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.8	5.3	1.3	30.4	6.4	1.0	22.6	0.6	0.4	4.1	0.6	0.5
Delay (s)	60.2	26.0	16.1	64.9	28.4	16.7	55.9	34.4	0.4	36.1	34.4	0.5
Level of Service	E	C	B	E	C	B	E	C	A	D	C	A
Approach Delay (s)		30.1			32.3			30.5			17.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.1%	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)	280	1520	440	470	1490	310	430	70	390	240	70	270
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	4818	1500	3252	4818	1500	3252	3353	1500	3252	3353	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	318	1727	500	534	1693	352	489	80	443	273	80	307
RTOR Reduction (vph)	0	0	313	0	0	198	0	0	0	0	0	0
Lane Group Flow (vph)	318	1727	187	534	1693	154	489	80	443	273	80	307
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			Free			Free
Actuated Green, G (s)	8.0	28.1	28.1	13.1	33.2	33.2	13.1	6.7	80.3	12.4	6.0	80.3
Effective Green, g (s)	9.0	30.1	30.1	14.1	35.2	35.2	13.1	7.7	80.3	12.4	7.0	80.3
Actuated g/C Ratio	0.11	0.37	0.37	0.18	0.44	0.44	0.16	0.10	1.00	0.15	0.09	1.00
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	4.0	5.0		4.0	5.0	
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)	364	1806	562	571	2112	658	531	322	1500	502	292	1500
v/s Ratio Prot	0.10	c0.36		c0.16	0.35		c0.15	0.02		0.08	0.02	
v/s Ratio Perm			0.12			0.10			c0.30			0.20
v/c Ratio	0.87	0.96	0.33	0.94	0.80	0.23	0.92	0.25	0.30	0.54	0.27	0.20
Uniform Delay, d1	35.1	24.5	17.9	32.6	19.5	14.1	33.1	33.6	0.0	31.3	34.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.0	13.1	1.6	22.7	3.3	0.8	21.5	0.4	0.5	1.2	0.5	0.3
Delay (s)	55.1	37.5	19.5	55.4	22.8	15.0	54.6	34.0	0.5	32.5	34.8	0.3
Level of Service	E	D	B	E	C	B	D	C	A	C	C	A
Approach Delay (s)		36.2			28.5			29.3			17.8	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	80.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.8%	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)	400	200	260	660	230	1000	300	1200	650	980	1350	450
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.94	0.95	1.00	0.94	0.95	1.00	0.94	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4549	3226	1443	4549	3226	1443	4549	4636	1443	4549	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4549	3226	1443	4549	3226	1443	4549	4636	1443	4549	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	455	227	295	750	261	1136	341	1364	739	1114	1534	511
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	455	227	295	750	261	1136	341	1364	739	1114	1534	511
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.9	18.0	100.0	17.0	20.1	100.0	8.0	24.0	100.0	21.0	37.0	100.0
Effective Green, g (s)	14.9	19.0	100.0	17.0	21.1	100.0	9.0	26.0	100.0	22.0	39.0	100.0
Actuated g/C Ratio	0.15	0.19	1.00	0.17	0.21	1.00	0.09	0.26	1.00	0.22	0.39	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	678	613	1443	773	681	1443	409	1205	1443	1001	1808	1443
v/s Ratio Prot	0.10	0.07		c0.16	0.08		0.07	c0.29		c0.24	0.33	
v/s Ratio Perm			0.20			c0.79			0.51			0.35
v/c Ratio	0.67	0.37	0.20	0.97	0.38	0.79	0.83	1.13	0.51	1.11	0.85	0.35
Uniform Delay, d1	40.2	35.3	0.0	41.2	33.9	0.0	44.8	37.0	0.0	39.0	27.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	1.7	0.3	25.1	1.6	4.4	13.6	70.2	1.3	64.7	5.2	0.7
Delay (s)	42.9	37.0	0.3	66.4	35.5	4.4	58.4	107.2	1.3	103.7	33.0	0.7
Level of Service	D	D	A	E	D	A	E	F	A	F	C	A
Approach Delay (s)		28.7			29.8			68.4			52.7	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	48.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	870	640	820	640	820	740
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.94	0.91	0.94	0.91	0.94	0.94
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	4549	4636	4549	4636	4549	4549
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	4549	4636	4549	4636	4549	4549
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	989	727	932	727	932	841
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	989	727	932	727	932	841
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	7	4	3	8	1	5
Permitted Phases						
Actuated Green, G (s)	14.0	14.3	13.7	14.0	14.7	14.7
Effective Green, g (s)	15.0	15.3	14.7	15.0	15.7	15.7
Actuated g/C Ratio	0.26	0.27	0.25	0.26	0.27	0.27
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1183	1229	1159	1205	1238	1238
v/s Ratio Prot	c0.22	c0.16	0.20	0.16	c0.20	0.18
v/s Ratio Perm						
v/c Ratio	0.84	0.59	0.80	0.60	0.75	0.68
Uniform Delay, d1	20.2	18.5	20.2	18.7	19.2	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	0.8	4.1	0.9	2.6	1.5
Delay (s)	25.5	19.2	24.3	19.6	21.9	20.3
Level of Service	C	B	C	B	C	C
Approach Delay (s)		22.8		22.2		
Approach LOS		C		C		

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.0%	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)	270	40	270	360	50	370	310	2150	390	410	2150	310
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	307	45	307	409	57	420	352	2443	443	466	2443	352
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	307	45	307	409	57	420	352	2443	443	466	2443	352
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.0	6.4	120.0	14.0	6.4	120.0	20.1	55.1	120.0	24.5	59.5	120.0
Effective Green, g (s)	14.0	7.4	120.0	14.0	7.4	120.0	21.1	57.1	120.0	25.5	61.5	120.0
Actuated g/C Ratio	0.12	0.06	1.00	0.12	0.06	1.00	0.18	0.48	1.00	0.21	0.51	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	365	199	1443	365	199	1443	550	2206	1443	665	2376	1443
v/s Ratio Prot	0.10	0.01		c0.13	0.02		0.11	c0.53		c0.15	0.53	
v/s Ratio Perm			0.21			0.29			c0.31			0.24
v/c Ratio	0.84	0.23	0.21	1.12	0.29	0.29	0.64	1.11	0.31	0.70	1.03	0.24
Uniform Delay, d1	51.9	53.6	0.0	53.0	53.8	0.0	45.9	31.4	0.0	43.7	29.2	0.0
Progression Factor	0.97	0.98	1.00	1.00	1.00	1.00	0.91	1.14	1.00	0.83	1.06	1.00
Incremental Delay, d2	15.9	0.6	0.3	83.9	0.8	0.5	2.4	55.3	0.5	1.1	18.8	0.1
Delay (s)	66.4	52.9	0.3	136.9	54.6	0.5	44.1	91.0	0.5	37.6	49.7	0.1
Level of Service	E	D	A	F	D	A	D	F	A	D	D	A
Approach Delay (s)		34.7			66.9			73.5			42.6	
Approach LOS		C			E			E			D	

Intersection Summary			
HCM Average Control Delay	57.1	HCM Level of Service	E
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	30	230	220	30	330	250	2290	250	290	2420	290
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	1698	1443	3130	1698	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	1698	1443	3130	1698	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	364	34	261	250	34	375	284	2602	284	330	2750	330
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	364	34	261	250	34	375	284	2602	284	330	2750	330
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.0	5.5	120.0	11.0	5.5	120.0	17.7	64.6	120.0	18.9	65.8	120.0
Effective Green, g (s)	12.0	6.5	120.0	12.0	6.5	120.0	18.7	65.6	120.0	19.9	66.8	120.0
Actuated g/C Ratio	0.10	0.05	1.00	0.10	0.05	1.00	0.16	0.55	1.00	0.17	0.56	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	313	92	1443	313	92	1443	488	2534	1443	519	2581	1443
v/s Ratio Prot	c0.12	0.02		0.08	0.02		0.09	0.56		c0.11	c0.59	
v/s Ratio Perm			0.18			c0.26			0.20			0.23
v/c Ratio	1.16	0.37	0.18	0.80	0.37	0.26	0.58	1.03	0.20	0.64	1.07	0.23
Uniform Delay, d1	54.0	54.8	0.0	52.8	54.8	0.0	47.0	27.2	0.0	46.7	26.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.78	1.00	1.00	0.74	1.38	1.00
Incremental Delay, d2	102.6	2.5	0.3	13.3	2.5	0.4	0.5	17.8	0.1	0.2	30.5	0.0
Delay (s)	156.6	57.3	0.3	66.1	57.3	0.4	37.2	45.0	0.1	34.8	67.3	0.0
Level of Service	F	E	A	E	E	A	D	D	A	C	E	A
Approach Delay (s)		89.6			28.3			40.3			57.6	
Approach LOS		F			C			D			E	

Intersection Summary			
HCM Average Control Delay	50.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	750	100	710	260	90	280	660	2000	280	260	2030	630
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.94	0.95	1.00	0.94	0.95	1.00	0.94	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4728	3353	1500	4728	3353	1500	4728	4818	1500	4728	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4728	3353	1500	4728	3353	1500	4728	4818	1500	4728	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	852	114	807	295	102	318	750	2273	318	295	2307	716
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	852	114	807	295	102	318	750	2273	318	295	2307	716
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	18.0	16.2	120.0	10.8	9.0	120.0	23.0	59.5	120.0	12.5	49.0	120.0
Effective Green, g (s)	19.0	17.2	120.0	11.8	10.0	120.0	24.0	61.5	120.0	13.5	51.0	120.0
Actuated g/C Ratio	0.16	0.14	1.00	0.10	0.08	1.00	0.20	0.51	1.00	0.11	0.42	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	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)	749	481	1500	465	279	1500	946	2469	1500	532	2048	1500
v/s Ratio Prot	c0.18	0.03		0.06	0.03		c0.16	c0.47		0.06	c0.48	
v/s Ratio Perm			c0.54			0.21			0.21			0.48
v/c Ratio	1.14	0.24	0.54	0.63	0.37	0.21	0.79	0.92	0.21	0.55	1.13	0.48
Uniform Delay, d1	50.5	45.6	0.0	52.0	52.0	0.0	45.6	27.0	0.0	50.4	34.5	0.0
Progression Factor	0.99	1.13	1.00	1.00	1.00	1.00	0.71	1.41	1.00	1.00	1.00	1.00
Incremental Delay, d2	77.6	0.3	1.4	2.8	0.8	0.3	1.7	2.8	0.1	1.3	63.9	1.1
Delay (s)	127.8	51.9	1.4	54.9	52.8	0.3	34.0	40.7	0.1	51.7	98.4	1.1
Level of Service	F	D	A	D	D	A	C	D	A	D	F	A
Approach Delay (s)		65.4			30.3			35.4			73.2	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.4%	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)	280	20	590	130	10	60	420	2510	100	100	2200	430
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	1765	1500	3252	1765	1500	3252	4818	1500	3252	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	1765	1500	3252	1765	1500	3252	4818	1500	3252	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	318	23	670	148	11	68	477	2852	114	114	2500	489
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	318	23	670	148	11	68	477	2852	114	114	2500	489
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.3	4.3	110.0	9.6	1.6	110.0	23.9	66.6	110.0	9.5	52.2	110.0
Effective Green, g (s)	12.3	5.3	110.0	9.6	2.6	110.0	24.9	68.6	110.0	10.5	54.2	110.0
Actuated g/C Ratio	0.11	0.05	1.00	0.09	0.02	1.00	0.23	0.62	1.00	0.10	0.49	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	364	85	1500	284	42	1500	736	3005	1500	310	2374	1500
v/s Ratio Prot	c0.10	0.01		0.05	0.01		c0.15	c0.59		0.04	c0.52	
v/s Ratio Perm			c0.45			0.05			0.08			0.33
v/c Ratio	0.87	0.27	0.45	0.52	0.26	0.05	0.65	0.95	0.08	0.37	1.05	0.33
Uniform Delay, d1	48.1	50.5	0.0	48.0	52.8	0.0	38.6	19.1	0.0	46.6	27.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.0	1.7	1.0	1.7	3.3	0.1	2.0	8.2	0.1	0.7	34.3	0.6
Delay (s)	68.1	52.2	1.0	49.7	56.1	0.1	40.6	27.3	0.1	47.4	62.2	0.6
Level of Service	E	D	A	D	E	A	D	C	A	D	E	A
Approach Delay (s)		23.3			35.2			28.2			52.0	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	37.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.6%	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)	610	460	840	880	470	640	870	1080	900	600	1010	570
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.94	0.91	1.00	0.94	0.91	1.00	0.94	0.91	1.00	0.94	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4728	4818	1500	4728	4818	1500	4728	4818	1500	4728	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4728	4818	1500	4728	4818	1500	4728	4818	1500	4728	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	693	523	955	1000	534	727	989	1227	1023	682	1148	648
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	693	523	955	1000	534	727	989	1227	1023	682	1148	648
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	16.4	14.5	90.0	17.0	15.1	90.0	18.6	23.3	90.0	14.2	18.9	90.0
Effective Green, g (s)	17.4	15.5	90.0	18.0	16.1	90.0	19.6	25.3	90.0	15.2	20.9	90.0
Actuated g/C Ratio	0.19	0.17	1.00	0.20	0.18	1.00	0.22	0.28	1.00	0.17	0.23	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	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)	914	830	1500	946	862	1500	1030	1354	1500	799	1119	1500
v/s Ratio Prot	0.15	0.11		c0.21	0.11		c0.21	0.25		0.14	c0.24	
v/s Ratio Perm			0.64			0.48			c0.68			0.43
v/c Ratio	0.76	0.63	0.64	1.06	0.62	0.48	0.96	0.91	0.68	0.85	1.03	0.43
Uniform Delay, d1	34.3	34.6	0.0	36.0	34.1	0.0	34.8	31.2	0.0	36.3	34.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.66	1.33	1.00
Incremental Delay, d2	3.6	1.6	2.1	45.6	1.3	1.1	19.1	10.3	2.5	5.1	26.9	0.5
Delay (s)	38.0	36.2	2.1	81.6	35.5	1.1	53.9	41.5	2.5	29.0	73.0	0.5
Level of Service	D	D	A	F	D	A	D	D	A	C	E	A
Approach Delay (s)		21.7			44.8			33.0			41.9	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	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	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	60	180	360	70	520	270	1550	510	500	1640	260
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	3353	1500	3252	3353	1500	3252	4818	1500	3252	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	3353	1500	3252	3353	1500	3252	4818	1500	3252	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	284	68	205	409	80	591	307	1761	580	568	1864	295
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	284	68	205	409	80	591	307	1761	580	568	1864	295
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.2	6.1	90.0	11.0	6.9	90.0	14.4	30.4	90.0	22.5	38.5	90.0
Effective Green, g (s)	10.2	7.1	90.0	11.0	7.9	90.0	15.4	32.4	90.0	23.5	40.5	90.0
Actuated g/C Ratio	0.11	0.08	1.00	0.12	0.09	1.00	0.17	0.36	1.00	0.26	0.45	1.00
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0		5.0	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)	369	265	1500	397	294	1500	556	1734	1500	849	2168	1500
v/s Ratio Prot	0.09	0.02		c0.13	0.02		0.09	c0.37		c0.17	c0.39	
v/s Ratio Perm			0.14			c0.39			0.39			0.20
v/c Ratio	0.77	0.26	0.14	1.03	0.27	0.39	0.55	1.02	0.39	0.67	0.86	0.20
Uniform Delay, d1	38.8	39.0	0.0	39.5	38.4	0.0	34.1	28.8	0.0	29.8	22.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.3	0.5	0.2	53.1	0.5	0.8	1.2	25.6	0.8	2.0	4.7	0.3
Delay (s)	48.1	39.5	0.2	92.6	38.9	0.8	35.3	54.4	0.8	31.8	26.9	0.3
Level of Service	D	D	A	F	D	A	D	D	A	C	C	A
Approach Delay (s)		29.4			38.4			40.4			25.1	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.2%	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)	500	120	450	380	120	420	420	1530	370	460	1570	530
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	2.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3353	1500	3252	3353	1443	3252	4636	1500	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3353	1500	3252	3353	1443	3252	4636	1500	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	568	136	511	432	136	477	477	1739	420	523	1784	602
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	568	136	511	432	136	477	477	1739	420	523	1784	602
Heavy Vehicles (%)	6%	2%	2%	2%	2%	6%	2%	6%	2%	6%	6%	6%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	18.0	11.2	110.0	16.6	9.8	110.0	20.2	39.0	110.0	22.2	42.0	110.0
Effective Green, g (s)	19.0	12.2	110.0	17.6	10.8	110.0	21.2	41.0	110.0	23.2	43.0	110.0
Actuated g/C Ratio	0.17	0.11	1.00	0.16	0.10	1.00	0.19	0.37	1.00	0.21	0.39	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	541	372	1500	520	329	1443	627	1728	1500	660	1812	1443
v/s Ratio Prot	c0.18	0.04		0.13	0.04		0.15	0.38		c0.17	c0.38	
v/s Ratio Perm			0.34			0.33			0.28			c0.42
v/c Ratio	1.05	0.37	0.34	0.83	0.41	0.33	0.76	1.01	0.28	0.79	0.98	0.42
Uniform Delay, d1	45.5	45.3	0.0	44.8	46.6	0.0	42.0	34.5	0.0	41.1	33.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.4	0.6	0.6	10.8	0.8	0.6	5.4	23.2	0.5	6.5	17.8	0.9
Delay (s)	97.9	45.9	0.6	55.6	47.5	0.6	47.4	57.7	0.5	47.6	51.0	0.9
Level of Service	F	D	A	E	D	A	D	E	A	D	D	A
Approach Delay (s)		51.2			29.4			46.7			40.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

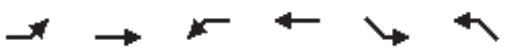
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	10	100	150	10	150	50	2310	90	110	2310	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	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	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613	3226	1443	1613	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1698	3226	1443	1698	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	114	11	114	170	11	170	57	2625	102	125	2625	80
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	38	0	0	27
Lane Group Flow (vph)	114	11	114	170	11	170	57	2625	64	125	2625	53
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			6
Actuated Green, G (s)	5.3	1.3	90.0	7.9	2.6	90.0	5.9	54.3	54.3	9.1	57.5	57.5
Effective Green, g (s)	5.3	2.3	90.0	7.9	3.6	90.0	6.9	56.3	56.3	10.1	59.5	59.5
Actuated g/C Ratio	0.06	0.03	1.00	0.09	0.04	1.00	0.08	0.63	0.63	0.11	0.66	0.66
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	6.0	6.0	5.0	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)	96	82	1443	144	129	1443	240	2900	903	351	3065	954
v/s Ratio Prot	0.05	0.00		c0.07	0.00		0.02	c0.57		c0.04	c0.57	
v/s Ratio Perm	0.02		0.08	c0.03		c0.12			0.04			0.04
v/c Ratio	1.19	0.13	0.08	1.18	0.09	0.12	0.24	0.91	0.07	0.36	0.86	0.06
Uniform Delay, d1	42.4	42.9	0.0	41.3	41.6	0.0	39.1	14.5	6.6	36.9	11.9	5.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	150.8	0.7	0.1	131.7	0.3	0.2	0.5	5.3	0.2	0.6	3.3	0.1
Delay (s)	193.2	43.6	0.1	173.0	41.9	0.2	39.6	19.8	6.8	37.6	15.2	5.5
Level of Service	F	D	A	F	D	A	D	B	A	D	B	A
Approach Delay (s)		94.2			85.2			19.7			16.0	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.8%	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)	370	110	350	500	110	530	390	1620	550	550	1640	390
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3130	3226	1443	3130	3226	1443	3130	4636	1443	3130	4636	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	420	125	398	568	125	602	443	1841	625	625	1864	443
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	420	125	398	568	125	602	443	1841	625	625	1864	443
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	17.7	10.0	120.0	19.0	11.3	120.0	21.4	44.0	120.0	27.0	49.6	120.0
Effective Green, g (s)	18.7	11.0	120.0	20.0	12.3	120.0	22.4	45.0	120.0	28.0	50.6	120.0
Actuated g/C Ratio	0.16	0.09	1.00	0.17	0.10	1.00	0.19	0.38	1.00	0.23	0.42	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	488	296	1443	522	331	1443	584	1739	1443	730	1955	1443
v/s Ratio Prot	0.13	0.04		c0.18	0.04		0.14	c0.40		c0.20	0.40	
v/s Ratio Perm			0.28			0.42			c0.43			0.31
v/c Ratio	0.86	0.42	0.28	1.09	0.38	0.42	0.76	1.06	0.43	0.86	0.95	0.31
Uniform Delay, d1	49.4	51.5	0.0	50.0	50.3	0.0	46.2	37.5	0.0	44.1	33.6	0.0
Progression Factor	1.32	1.01	1.00	1.12	1.23	1.00	1.00	1.00	1.00	1.05	1.08	1.00
Incremental Delay, d2	14.2	1.0	0.5	61.6	0.6	0.7	5.6	39.0	0.9	8.6	10.8	0.5
Delay (s)	79.2	52.7	0.5	117.5	62.4	0.7	51.9	76.5	0.9	54.9	47.0	0.5
Level of Service	E	D	A	F	E	A	D	E	A	D	D	A
Approach Delay (s)		42.5			57.9			56.5			41.7	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	49.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	450	160	580	170	490	400
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3252	3353	3252	3353	3252	3252
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3252	3353	3252	3353	3252	3252
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	511	182	659	193	557	455
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	511	182	659	193	557	455
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Prot	Prot
Protected Phases	7	4	3	8	1	1
Permitted Phases						
Actuated Green, G (s)	10.9	6.2	12.4	7.7	10.7	10.7
Effective Green, g (s)	14.9	10.2	16.4	11.7	14.7	14.7
Actuated g/C Ratio	0.32	0.22	0.35	0.25	0.31	0.31
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)	1024	723	1128	829	1011	1011
v/s Ratio Prot	0.16	0.05	c0.20	c0.06	c0.17	0.14
v/s Ratio Perm						
v/c Ratio	0.50	0.25	0.58	0.23	0.55	0.45
Uniform Delay, d1	13.2	15.4	12.7	14.2	13.6	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2	0.8	0.1	0.7	0.3
Delay (s)	13.6	15.6	13.4	14.4	14.2	13.4
Level of Service	B	B	B	B	B	B
Approach Delay (s)		14.1		13.6		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	4.0
Intersection Capacity Utilization	46.9%	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)	280	80	610	280	80	120	670	1670	330	110	1570	240
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	4.0	2.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3252	1698	1500	3130	1698	1443	3252	4818	1443	3130	4818	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3252	1698	1500	3130	1698	1443	3252	4818	1443	3130	4818	1500
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	318	91	693	318	91	136	761	1898	375	125	1784	273
RTOR Reduction (vph)	0	0	0	0	0	123	0	0	0	0	0	0
Lane Group Flow (vph)	318	91	693	318	91	13	761	1898	375	125	1784	273
Heavy Vehicles (%)	2%	6%	2%	6%	6%	6%	2%	2%	6%	6%	2%	2%
Turn Type	Prot		Free	Prot		Perm	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Actuated Green, G (s)	15.1	12.3	120.0	14.6	11.8	11.8	31.0	62.8	120.0	9.3	41.1	120.0
Effective Green, g (s)	16.1	12.3	120.0	14.6	11.8	11.8	32.0	64.8	120.0	9.3	43.1	120.0
Actuated g/C Ratio	0.13	0.10	1.00	0.12	0.10	0.10	0.27	0.54	1.00	0.08	0.36	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	6.0		5.0	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)	436	174	1500	381	167	142	867	2602	1443	243	1730	1500
v/s Ratio Prot	0.10	0.05		c0.10	0.05		c0.23	0.39		0.04	c0.37	
v/s Ratio Perm			c0.46			0.01			0.26			0.18
v/c Ratio	0.73	0.52	0.46	0.83	0.54	0.09	0.88	0.73	0.26	0.51	1.03	0.18
Uniform Delay, d1	49.9	51.1	0.0	51.5	51.5	49.2	42.1	20.9	0.0	53.2	38.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.22	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	2.8	1.0	14.5	3.6	0.3	8.9	1.6	0.4	1.8	30.1	0.3
Delay (s)	55.9	53.9	1.0	66.0	55.1	49.5	52.8	27.2	0.4	55.0	68.5	0.3
Level of Service	E	D	A	E	E	D	D	C	A	E	E	A
Approach Delay (s)		21.2			60.1			30.3			59.2	
Approach LOS		C			E			C			E	

Intersection Summary			
HCM Average Control Delay	40.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	0	740	470	0	160	760	810	500	120	710	180
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0		4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00		1.00	0.97		1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613		1443	3130		1443	3130	3226	1443	1613	3226	1443
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1613		1443	3130		1443	3130	3226	1443	1613	3226	1443
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	250	0	841	534	0	182	864	920	568	136	807	205
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	250	0	841	534	0	182	864	920	568	136	807	205
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7			3			5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.0		70.0	13.0		70.0	21.0	30.0	70.0	12.0	21.0	70.0
Effective Green, g (s)	13.0		70.0	13.0		70.0	21.0	30.0	70.0	12.0	21.0	70.0
Actuated g/C Ratio	0.19		1.00	0.19		1.00	0.30	0.43	1.00	0.17	0.30	1.00
Clearance Time (s)	5.0			5.0			5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	300		1443	581		1443	939	1383	1443	277	968	1443
v/s Ratio Prot	0.15			c0.17			c0.28	0.29		0.08	c0.25	
v/s Ratio Perm			0.58			0.13			0.39			0.14
v/c Ratio	0.83		0.58	0.92		0.13	0.92	0.67	0.39	0.49	0.83	0.14
Uniform Delay, d1	27.5		0.0	28.0		0.0	23.7	16.0	0.0	26.2	22.9	0.0
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	23.0		1.7	22.0		0.2	15.4	2.5	0.8	6.1	8.4	0.2
Delay (s)	50.4		1.7	49.9		0.2	39.1	18.5	0.8	32.3	31.3	0.2
Level of Service	D		A	D		A	D	B	A	C	C	A
Approach Delay (s)		12.9			37.3			21.8			25.8	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group