APPENDIX 3: TRAFFIC ANALYSES

APPENDIX 3A: SUPPORTING TRAFFIC ANALYSES AND TECHNICAL DOCUMENTATION

APPENDIX 3A. SUPPORTING TRAFFIC ANALYSES AND TECHNICAL DOCUMENTATION

A3.1 Introduction

During the course of the development of concepts for the Southern Connector/Champlain Parkway, various alternatives were considered in addition to the two Build Alternatives described in Chapter 4. These other alternatives were ultimately dismissed because they did not meet the project's transportation needs and objectives, and/or because of their associated impacts to natural resources and cultural resources, or impacts to social and economic characteristics of the area. The alternatives considered and dismissed included a non-construction alternative that considered the effects of implementing Travel Demand Management (TDM) and three construction alternatives, as follows:

- Travel Demand Management (TDM)
- Null Alternative (C-1 Section, C-2 Section and C-8 Section)
- Build Alternative 1 (four-lane)
- C-1 Section and C-2 Section Only (two-lane)

The traffic volumes and traffic operations associated with each of these alternatives are described in Section A3.2 – Traffic Analyses for Alternatives Considered and Dismissed.

This Appendix 3 also provides a summary description of the traffic modeling effort used to develop the design year traffic volume projections for the various project alternatives (including the No-Build Alternative, Build Alternatives, and alternatives considered but dismissed), and the supporting technical documentation of the level-of-service analyses presented throughout the document.

A3.2 Traffic Analyses for Alternatives Considered and Dismissed

This section describes the volume patterns and traffic operations for the project's design year conditions for each of the alternatives considered and dismissed. This section also compares these alternatives to the No-Build and Build Alternatives presented in Chapter 4.

The evaluation of the traffic operations for the Build Alternatives considered but dismissed were based on travel demand models developed for the Primary and Secondary study areas for the project design years 2008 and 2028. The analyses of traffic operations for these alternatives were based on the same general infrastructure characteristics as were used for the analysis of the two Build Alternatives described in Chapter 4, namely:

1. A 30 mph posted speed limit on the Southern Connector/Champlain Parkway from the I-189 / U.S. Route 7 interchange northward to the terminus with the local street system.

2. Proposed signalized intersections along the primary corridor of the Southern Connector/Champlain Parkway feature exclusive pedestrian phases. Where signal improvements are indicated at other locations (i.e., along Pine Street and/or Battery Street) associated with specific Build Alternatives, these locations would also have exclusive pedestrian phases. Intersections along the C-2 Section of the project (with Home Avenue, Flynn Avenue, Sears Lane, and Lakeside Avenue) would be signalized.

3. Signals within 0.5 mile of each other would be coordinated using cycle lengths that were optimized for each peak hour and design year condition.

4. Geometric and signal operation improvements and equipment replacement were assumed for the Pine Street at Lakeside Avenue intersection and all intersections along Battery Street (except in the C-1 Section and C-2 Section Only Alternative).

A3.2.1 Travel Demand Management (TDM) Alternative

The analyses of the No-Build Alternative shows that some key intersections and corridor sections would have congested operations during the projected design years, which would reduce mobility within the corridor and would not be consistent with the project's goals and objectives. A non-construction alternative that was considered to address these conditions was the implementation of TDM strategies. The TDM alternative considers the system benefits that could be achieved through increased transit ridership and ridesharing initiatives to reduce traffic volume demand during peak demand periods.

The effects of an aggressive TDM policy were evaluated using the regional travel demand model. For the purposes of this evaluation, the TDM program was implemented for the area bounded by Pearl Street to the north, South Willard Street and Shelburne Street to the east, the I-189/U.S. Route 7 (Shelburne Street) interchange to the south, and Lake Champlain to the west. For this discussion, the aforementioned area is referred to as the TDM Area. The assumptions for the TDM program consisted of the following:

- Roads in the TDM area that are not currently serviced by public transit were provided with this service.
- The frequency of bus service was doubled throughout the entire TDM area,

- A 10% increase in participation in rideshare programs was assumed for work-related trips in the TDM area.
- The effect of resuming passenger rail service on the Champlain Flyer was included based on ridership rates when this service was active.

The mobility benefits associated with the implementation of the TDM alternative are expressed in terms of reductions in person-trips that are made by automobile and by changes in the overall Vehicle Miles of Travel (VMT) in the Primary and Secondary study areas of the project. An evaluation of the modeling for the transit service enhancements (increased route coverage and service frequency) shows that these TDM improvements would increase transit ridership by approximately 10-15% in both the 2008 and 2028 design years. The resulting increase in bus ridership, with increased route coverage and a doubling of the service frequency, is summarized for each of the scenarios in Table A3-1. These analysis results indicate that transit service enhancements alone would not have a substantial effect in addressing the project's mobility objectives. This modest change in ridership is also not likely to be cost-effective for the provision of these expanded transit services.

Table A3-1: Effect of increasing bus service on ridership rates

	No-Build Alternative (No TDM)	TDM Alternative (increased transit routes coverage and service frequency)	
Design Year and Peak Hour	Total Person-Trips using Transit	Total Person-Trips using Transit	Net Increase in Person-trips using Transit
2008 AM	825	924	99
2008 PM	623	706	83
2028 AM	864	958	94
2028 PM	630	715	85

The evaluation of the cumulative effect of implementing the full TDM program of increased transit service, resumed passenger rail service and increased ridesharing indicates that these would not, by themselves, produce a substantial improvement in mobility in the project area. These combined TDM initiatives are shown to reduce the total VMT in the Primary and Secondary study areas by only approximately one-half percent. The total vehicle trips removed and the corresponding effect on total VMT of the full TDM program (bus, rail, and rideshare) are summarized in Table A3-2.

Table A3-2: Effect of TDM Program on Total Vehicle Trips and Vehicle Miles Traveled

	No-Build Alternative (No TDM)		TDM Program Alternative		
Design Year and Peak Hour	Total Vehicle Trips	VMT	Trips Removed	VMT Reduction	% Δ VMT
2008 AM	73,031	711,837	632	3,247	-0.46%
2008 PM	71,472	499,314	619	3,293	-0.66%
2028 AM	82,524	897,236	649	3,181	-0.35%
2028 PM	77,198	544,158	627	3,223	-0.59%

Based on these analyses, it is concluded that the TDM alternative does not address the overall project objective to improve mobility in the Primary study area. It is also noted that the TDM alternative does not address the objective to improve freight accessibility to the industrial facilities along the project corridor.

A3.2.2 Null Alternative

The Null Alternative consists of constructing a four-lane roadway along the C-1 Section, C-2 Section and C-8 Section. The Null Alternative was previously approved by FHWA in 1979 for construction. The C-8 Section extends north from the intersection of Lakeside Avenue and connects with Battery Street at its intersection with Maple Street.

Traffic Volumes:

The projected ADT volumes in the Primary study area for the Null Alternative are shown in Table A3-3. A comparison of these volumes to those of the No-Build Alternative indicates that the Null Alternative would divert a substantial volume from the Pine Street corridor between Home Avenue and Main Street. Traffic volumes on the section of Pine Street between Lakeside Avenue and Maple Street would be 50% less than in the No-Build Alternative. Also, traffic volumes on the section of Pine Street south of Lakeside Avenue are projected to decrease by more than 50% and volumes north of Maple Street would see a 40% reduction.

Table A3-3: Average Daily Traffic Volume Summary: Null Alternative

Location	Null Alternative	
	2008 (ETC)	2028 (ETC+20)
Southern Connector/Champlain Parkway: Home Avenue to Lakeside Avenue	19,600	19,700
Pine Street: Home Avenue to Flynn Avenue	2,600	2,800
Pine Street: Flynn Avenue to Lakeside Avenue	6,400	6,500
Pine Street: Lakeside Avenue to Maple Street	6,800	6,900
Pine Street: Maple Street to Main Street	4,000	4,000
Battery Street: Maple Street to Main Street	18,700	18,700
Lakeside Avenue: Connector to Pine Street	5,200	5,700
Maple Street: Pine Street to Battery Street	3,900	4,100
King Street: Pine Street to Battery Street	3,500	3,500
Main Street: Pine Street to Battery Street	5,100	5,100

The design year peak hour volumes produced from the travel demand modeling for the Null Alternative are presented in Figures A3-1 through A3-4, as follows:

- Figure A3-1: 2008 AM Peak Hour
- Figure A3-2: 2008 PM Peak Hour
- Figure A3-3: 2028 AM Peak Hour
- Figure A3-4: 2028 PM Peak Hour

The following traffic flow patterns are observed from these peak hour volumes:

- Pine Street is no longer used as a primary corridor for access to the City Center District (CCD).

- The Pine Street/Maple Street intersection is no longer a critical congestion point in the system for traffic access and circulation.

- Home Avenue and Flynn Avenue would see a substantial reduction in traffic volume as these roadways convert to a primary function of local access, and through traffic is diverted to the Southern Connector/Champlain Parkway.

Traffic Operations

Table A3-4 presents results of the capacity analyses for the Primary study area intersections in the 2008 and 2028 design years for the Null Alternative. Figures A3-5 and A3-6 present the overall LOS at each study intersection within the Primary and Secondary study areas for the 2008 Design Year AM and PM peak hours, respectively. The LOS for the combined Primary and Secondary study areas in the 2028 design year AM and PM peak hours are shown on Figures A3-7 and A3-8. Detailed LOS and delay calculations are provided in Part C of this Appendix.

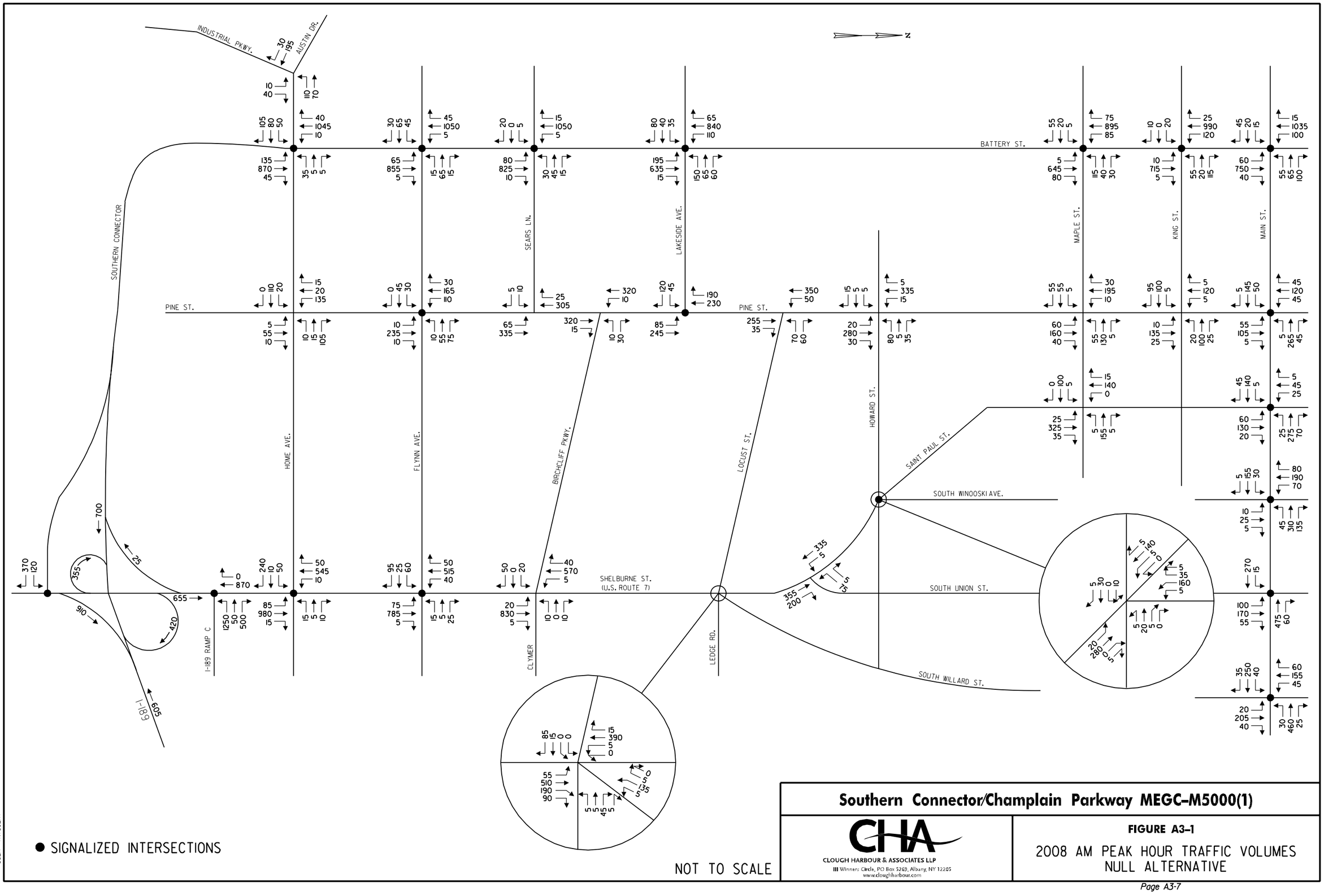

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FIGURE A3-1

2008 AM PEAK HOUR TRAFFIC VOLUMES
NULL ALTERNATIVE

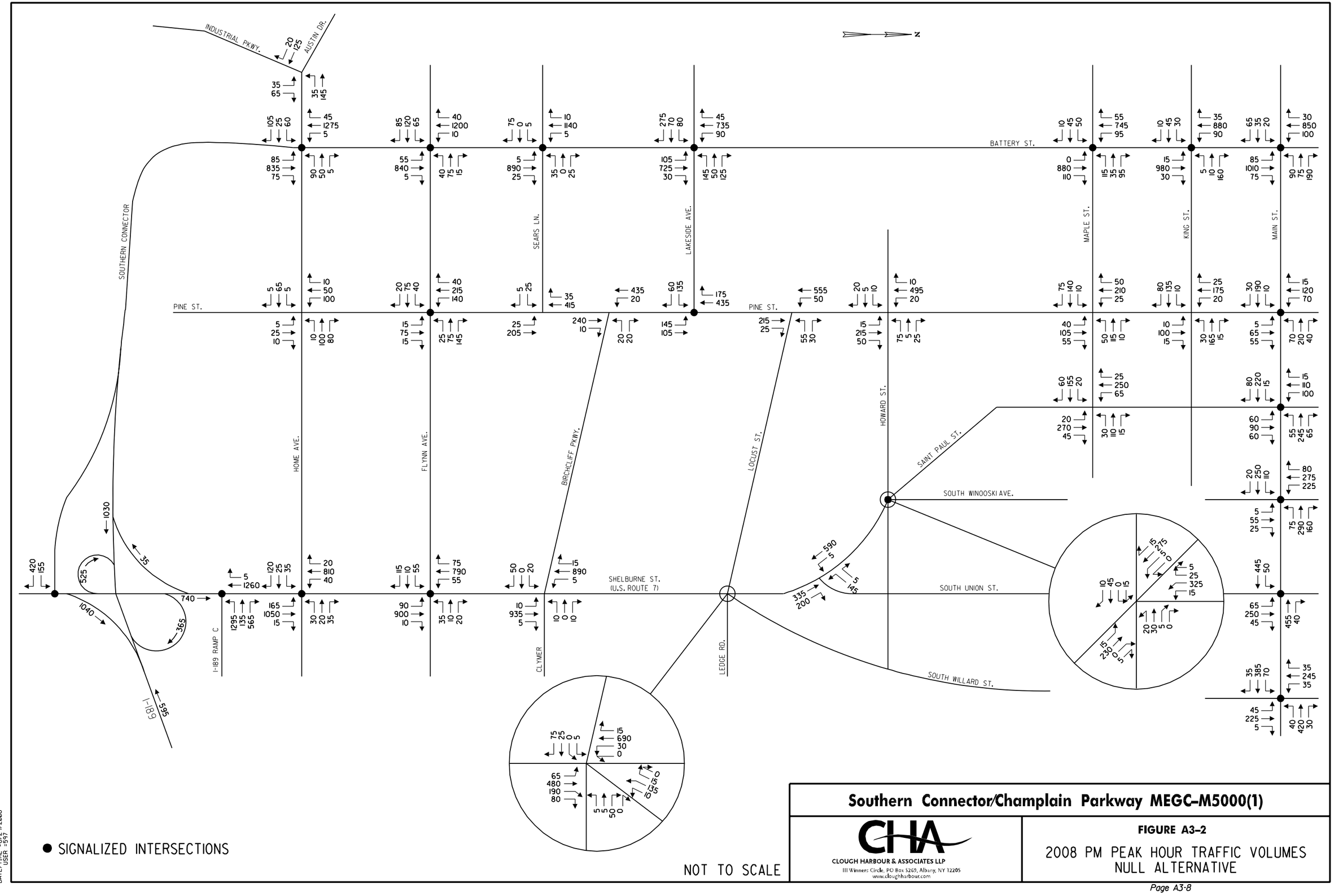

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FIGURE A3-2

2008 PM PEAK HOUR TRAFFIC VOLUMES
NULL ALTERNATIVE

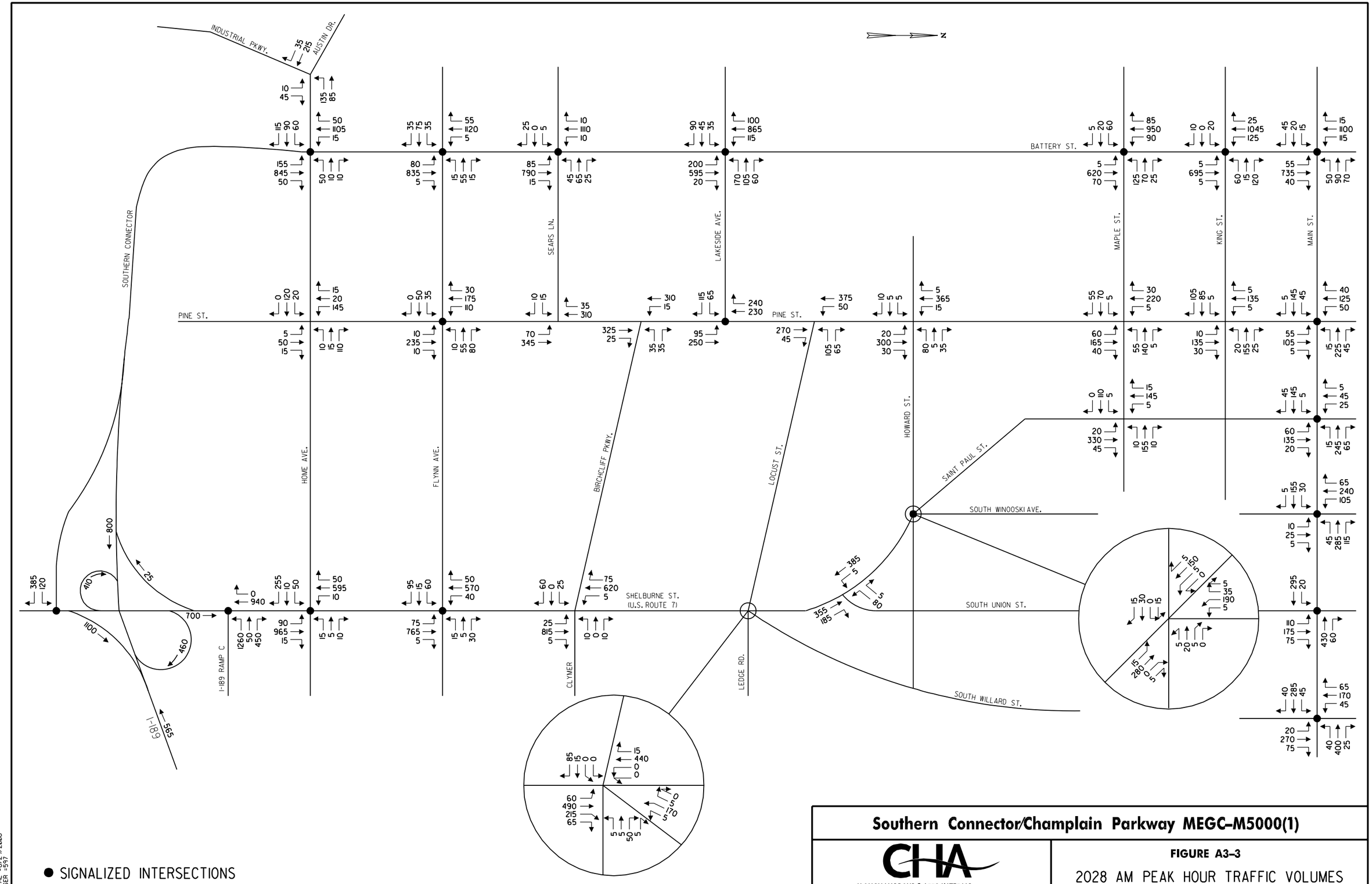

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FIGURE A3-3

2028 AM PEAK HOUR TRAFFIC VOLUMES
NULL ALTERNATIVE

INDUSTRIAL PKWY.
AUSTIN DR.
SOUTHERN CONNECTOR
PINE ST.
BATTERY ST.
HOME AVE.
FLYNN AVE.
SEARS LN.
LAKESIDE AVE.
BIRCHCLIFF PKWY.
LOCUST ST.
HOWARD ST.
MAPLE ST.
KING ST.
MAIN ST.
SAINT PAUL ST.
SOUTH WINOOSKI AVE.
SOUTH UNION ST.
SOUTH WILLARD ST.
SHELBURNE ST.
(U.S. ROUTE 7)
I-189 RAMP C
I-189
CLYMER
LEDGE RD.

● SIGNALIZED INTERSECTIONS

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FIGURE A3-4

2028 PM PEAK HOUR TRAFFIC VOLUMES
NULL ALTERNATIVE

Table A3-4: Level of Service Summary – Null Alternative

Location	2008 (ETC)		2028 (ETC+20)	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Signalized Intersections				
Battery Street & Main Street	B	B	B	B
Battery Street & King Street	B	B	B	B
Battery Street & Maple Street	B	C	C	C
Pine Street & Main Street	B	B	B	B
Pine Street & Lakeside Avenue	B	B	C	B
Pine Street & Flynn Avenue	B	B	B	B
Connector & Lakeside Avenue	D	D	D	D
Connector & Sears Lane	B	A	C	A
Connector & Flynn Avenue	B	C	B	C
Connector & Home Avenue	B	B	B	B
AWSC (1) Intersections				
Pine Street & King Street	A	B	B	B
Pine Street & Maple Street	B	B	B	B
Pine Street & Home Avenue	A	A	A	A
TWSC (2) Intersections				
Pine Street & Howard Street				
Eastbound Approach	B	C	C	C
Westbound Approach	C	D	C	D
Pine Street & Locust Street				
Westbound Approach	C	C	C	C
Pine Street & Birchcliff Parkway				
Westbound Approach	B	B	B	C
Pine St & Sears Lane				
Eastbound Approach	C	C	C	C

(1) AWSC = All-Way Stop Control

(2) *TWSC = Two-Way Stop Control (i.e., Side Street Stop). Note that the LOS for TWSC intersections represents the operation of the minor stop-controlled approach movements. Mainline movements are free-flow.*

2008 Design Year: Null Alternative

Primary Study Area

The signalized intersections within the Primary study area are projected to operate at an overall LOS D or better during both the AM and PM peak hour. Many of these locations would operate at LOS B. Signal timing optimization (including exclusive pedestrian phasing) and geometric improvements were applied to the intersections

along Battery Street. Signal phasing was designed to promote the major north-south traffic flow. All the AWSC intersections within the Primary study area along Pine Street would operate at a LOS A or B during both peak hours. This LOS and associated vehicle delay is a substantial improvement from the conditions indicated for the No-Build Alternative.

The operations at the TWSC intersections within the Primary study area would similarly have improved LOS in this alternative. LOS for the stop-controlled approaches would be LOS D or better, with most approaches operating at LOS B or C.

Secondary Study Area

The signalized intersections within the Secondary study area would generally operate at LOS C or better during the AM and PM peak hours, although the intersection of U.S. Route 7 and I-189 Ramp C would operate at LOS D in the PM peak hour.

The LOS for the stop-controlled intersections within the Secondary study area would be LOS D or better during the AM peak hour, except the side street approaches to the South Willard Street / Shelburne Street intersection. The LOS for these approaches would be LOS F, which is comparable to existing conditions. The operations for the stop-controlled approaches at the following intersections would continue to be LOS E or F during the PM peak hour:

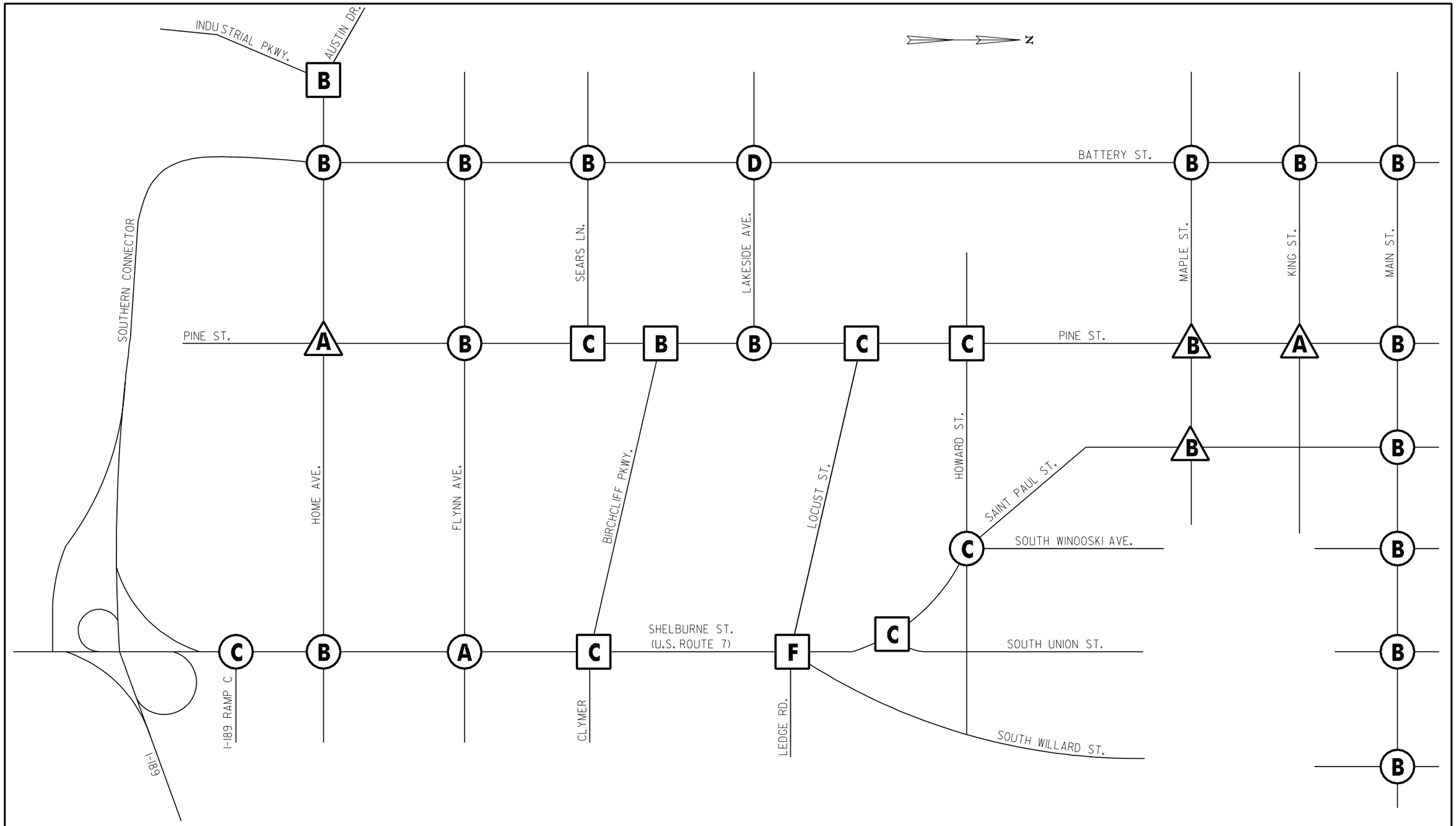
- U.S. Route 7 and Birchcliff Parkway
- U.S. Route 7 and South Willard Street
- U.S. Route 7 and South Union Street

2028 Design Year: Null Alternative

Primary Study Area

The intersection operations in the Primary study area for the 2028 design year would be generally comparable to the operations noted for the 2008 design year. The proposed signalized intersections along the new Southern Connector/Champlain Parkway would operate at overall LOS D or better in this design year. The AWSC intersections in the Primary study area along Pine Street would continue to operate at LOS B or better for both peak hours. These operations continue to represent an improvement from the No-Build Alternative, representing a substantial reduction in average vehicle delay.

The stop-controlled approaches at the TWSC intersections in the Primary study area along Pine Street would continue to operate at acceptable LOS for both peak hours.



LEGEND

- (X) SIGNAL CONTROL (OVERALL LOS)
- ⚠ ALL-WAY STOP CONTROL (OVERALL LOS)
- [X] 2-WAY STOP CONTROL (MINOR STREET APPROACH LOS)

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FIGURE A3-5

2008 AM PEAK HOUR LEVEL OF SERVICE
NULL ALTERNATIVE

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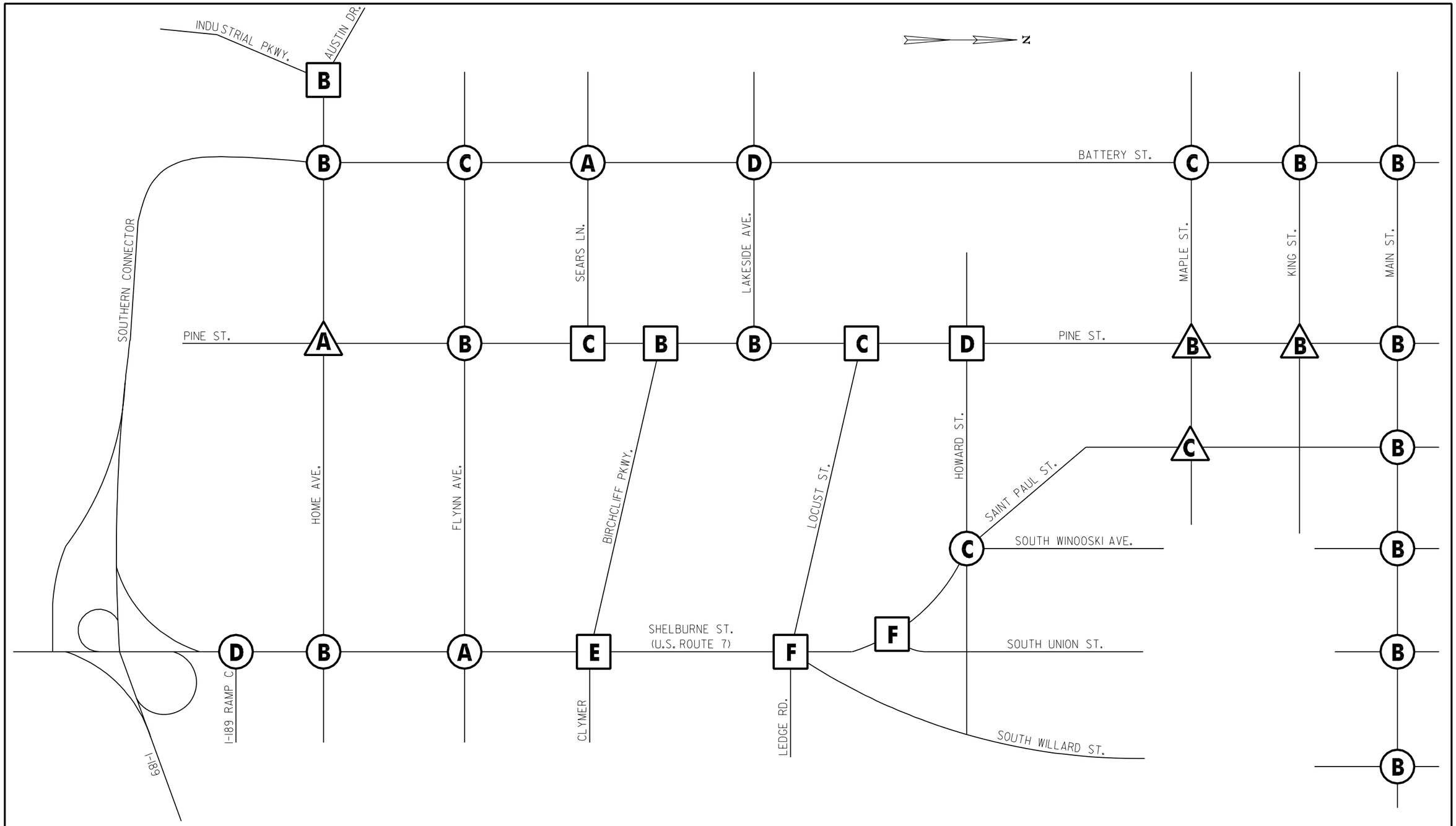

LEGEND

- (X) SIGNAL CONTROL (OVERALL LOS)
- ⁂ ALL-WAY STOP CONTROL (OVERALL LOS)
- [X] 2-WAY STOP CONTROL (MINOR STREET APPROACH LOS)

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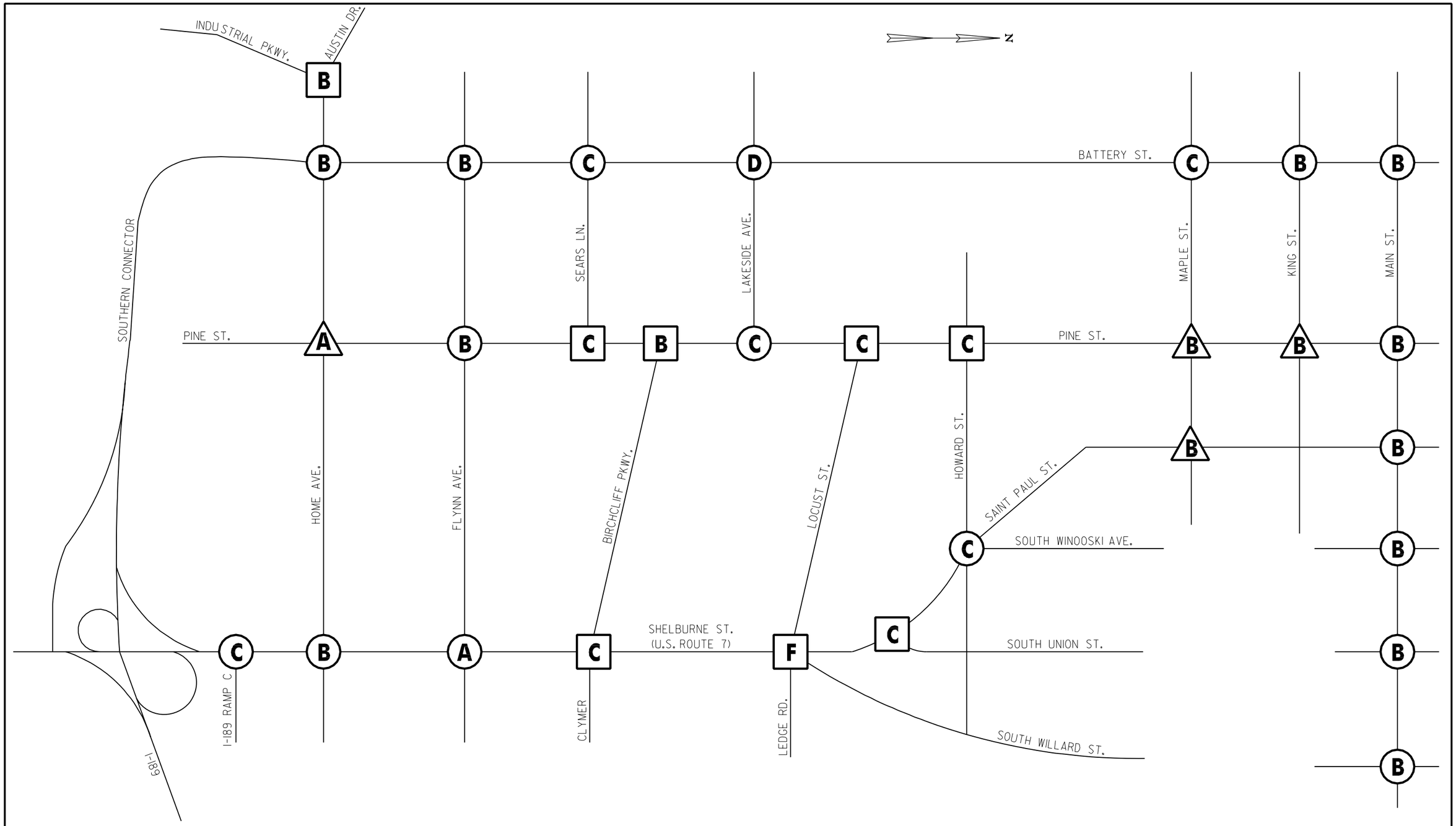
FIGURE A3-6

2008 PM PEAK HOUR LEVEL OF SERVICE
NULL ALTERNATIVE



LEGEND

- (X) SIGNAL CONTROL (OVERALL LOS)
- ⚠ ALL-WAY STOP CONTROL (OVERALL LOS)
- [X] 2-WAY STOP CONTROL (MINOR STREET APPROACH LOS)

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FIGURE A3-7

2028 AM PEAK HOUR LEVEL OF SERVICE
NULL ALTERNATIVE

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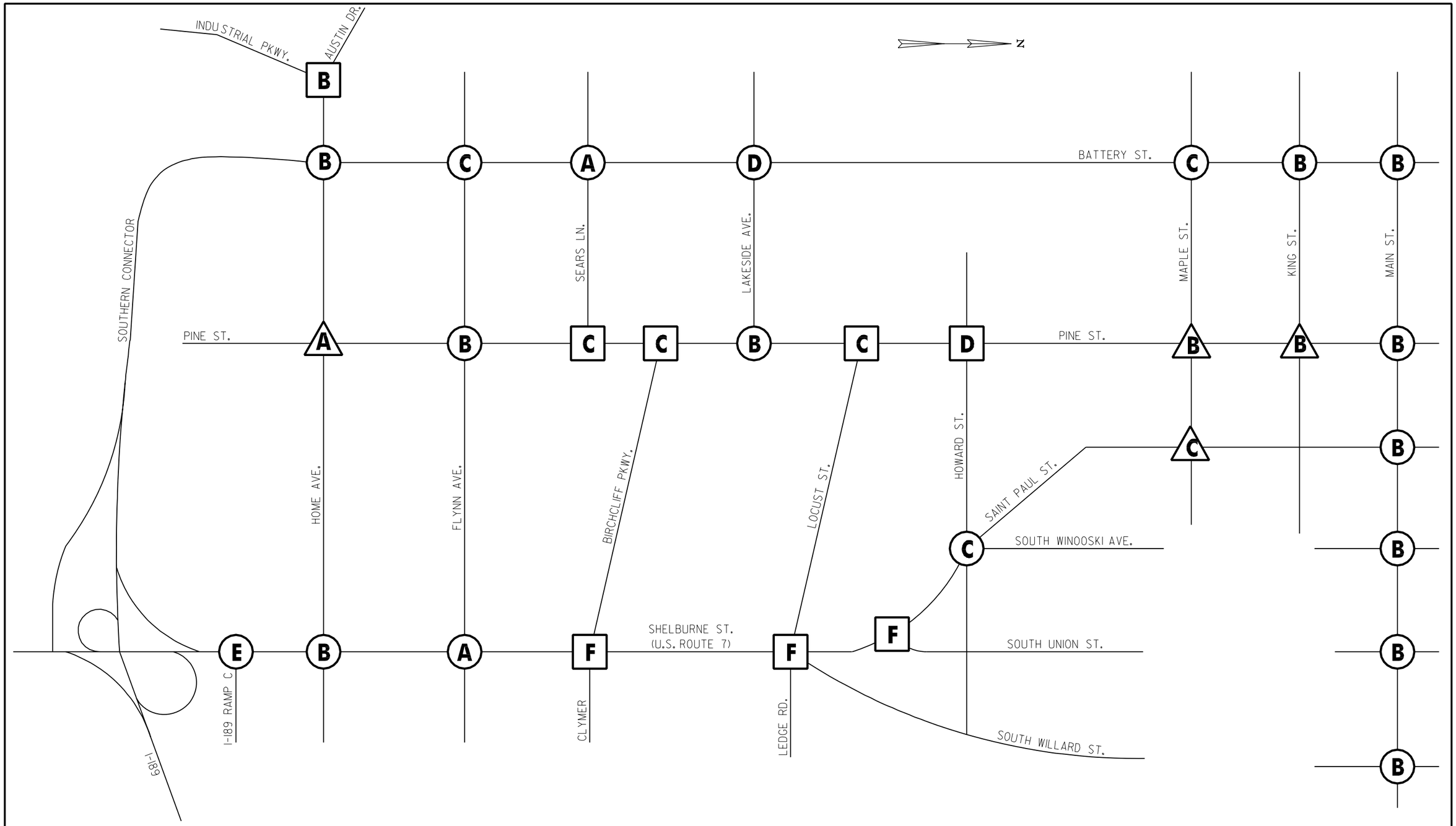

LEGEND

- (X) SIGNAL CONTROL (OVERALL LOS)
- ⁂ ALL-WAY STOP CONTROL (OVERALL LOS)
- [X] 2-WAY STOP CONTROL (MINOR STREET APPROACH LOS)

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FIGURE A3-8

2028 PM PEAK HOUR LEVEL OF SERVICE
NULL ALTERNATIVE

Secondary Study Area

The signalized intersections within the Secondary study area would operate at an overall LOS C or better through this 20-year design horizon, with one exception. The intersection of U.S. Route 7 at I-189 Ramp C would operate at LOS E during the PM peak hour.

The stop-controlled approaches in the Secondary study area would also see a decrease in delay but some would still have LOS E/F operations in the PM peak hour.

Summary of Null Alternative Traffic Operations

Traffic volumes along Pine Street would be dramatically reduced in this alternative due to the direct connection from the Southern Connector/Champlain Parkway to Battery Street. The intersections along Pine Street, from Lakeside Avenue to Maple Street, would have substantially improved LOS because of the shift in volume from Pine Street to the Southern Connector/Champlain Parkway. The C-8 Section connection provides sufficient capacity to accommodate the projected traffic volumes at acceptable overall LOS throughout the 20-year design period.

The Null Alternative also provides some general improvement in LOS along the Shelburne Street corridor from the No-Build Alternative as a result of reduced traffic volume, and particularly, reduced turn movement volumes at key intersections such as Home Avenue and Flynn Avenue.

The Null Alternative satisfies the purpose and need of this project by providing mobility and access to the CCD. This alternative is also very effective in diverting through traffic away from the residential neighborhoods and providing connectivity to existing industrial facilities. However, the C-8 Section of this alternative requires new roadway construction within the environmentally-sensitive Superfund Site. As a result of the numerous environmental issues and associated remediation costs, the Null Alternative is not progressed as the Preferred Alternative.

A3.2.3 Build Alternative 1 (four-lane)

This variation of Build Alternative 1 would follow the same alignment as the two-lane alternative described in Chapter 4, but would provide the additional capacity of a four-lane facility. This four-lane alternative is discussed to provide comparison to the Null Alternative traffic operations. This alternative would involve the widening of the section of Pine Street, between Lakeside Avenue and the proposed Battery Street Extension, to maintain the continuity of the four-lane corridor.

Traffic Volumes

The projected ADT volumes in the Primary study area are shown in Table A3-5 for this alternative. A review of this data indicates that traffic volumes on the section of Pine Street between Lakeside Avenue and Pine Place would increase by 40% compared to the No-Build Alternative. Similar to the two-lane version of this alternative, this increase is a result of this section of Pine Street serving as the link between the C-1 Section and C-2 Section and the CCD. Traffic volumes on the sections of Pine Street external to this linkage would decrease substantially. Volume on the section south of Lakeside Avenue is projected to decrease by more than 50% and volume north of Maple Street is projected to decrease 20%. These changes in traffic flow patterns are comparable to the two-lane version of this alignment alternative.

Table A3-5: Average Daily Traffic Volume Summary: Build Alternative 1 (four-lane)

Location	Build Alternative 1 (4-lane)	
	2008 (ETC)	2028 (ETC+20)
Southern Connector/Champlain Parkway: Home Avenue to Lakeside Avenue	15,100	15,100
Pine Street: Home Avenue to Flynn Avenue	3,300	3,300
Pine Street: Flynn Avenue to Lakeside Avenue	8,400	8,500
Pine Street: Lakeside Avenue to Pine Place	19,900	20,000
Pine Street: Pine Place to Main Street	5,300	5,300
Battery Street: Maple Street to Main Street	15,100	15,400
Lakeside Avenue: Connector to Pine Street	13,000	13,000
Maple Street: Pine Street to Battery Street	3,300	3,400
King Street: Pine Street to Battery Street	3,200	3,300
Main Street: Pine Street to Battery Street	6,000	6,000

The design year peak hour volumes produced from the travel demand modeling for the Build Alternative 1 (four-lane) are presented in Figures A3-9 through A3-12, as follows:

- Figure A3-9: 2008 AM Build Alternative 1 (four-lane)
- Figure A3-10: 2008 PM Build Alternative 1 (four-lane)
- Figure A3-11: 2028 AM Build Alternative 1 (four-lane)
- Figure A3-12: 2028 PM Build Alternative 1 (four-lane)

The traffic circulation patterns and trends observed from these peak hour turning movement volumes are the same as were noted in Chapter 4 for Build Alternative 1.

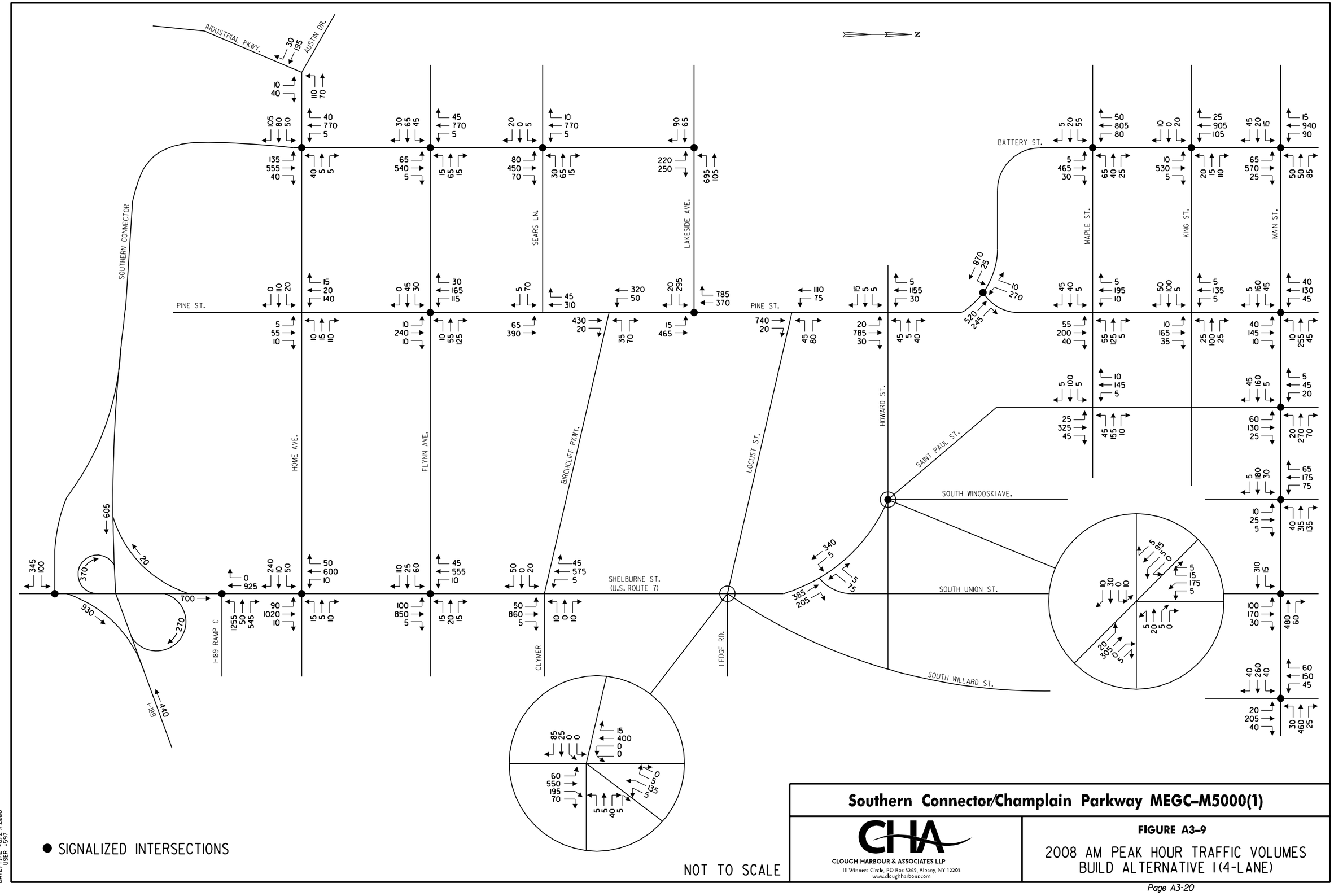

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FIGURE A3-9

2008 AM PEAK HOUR TRAFFIC VOLUMES
BUILD ALTERNATIVE 1 (4-LANE)

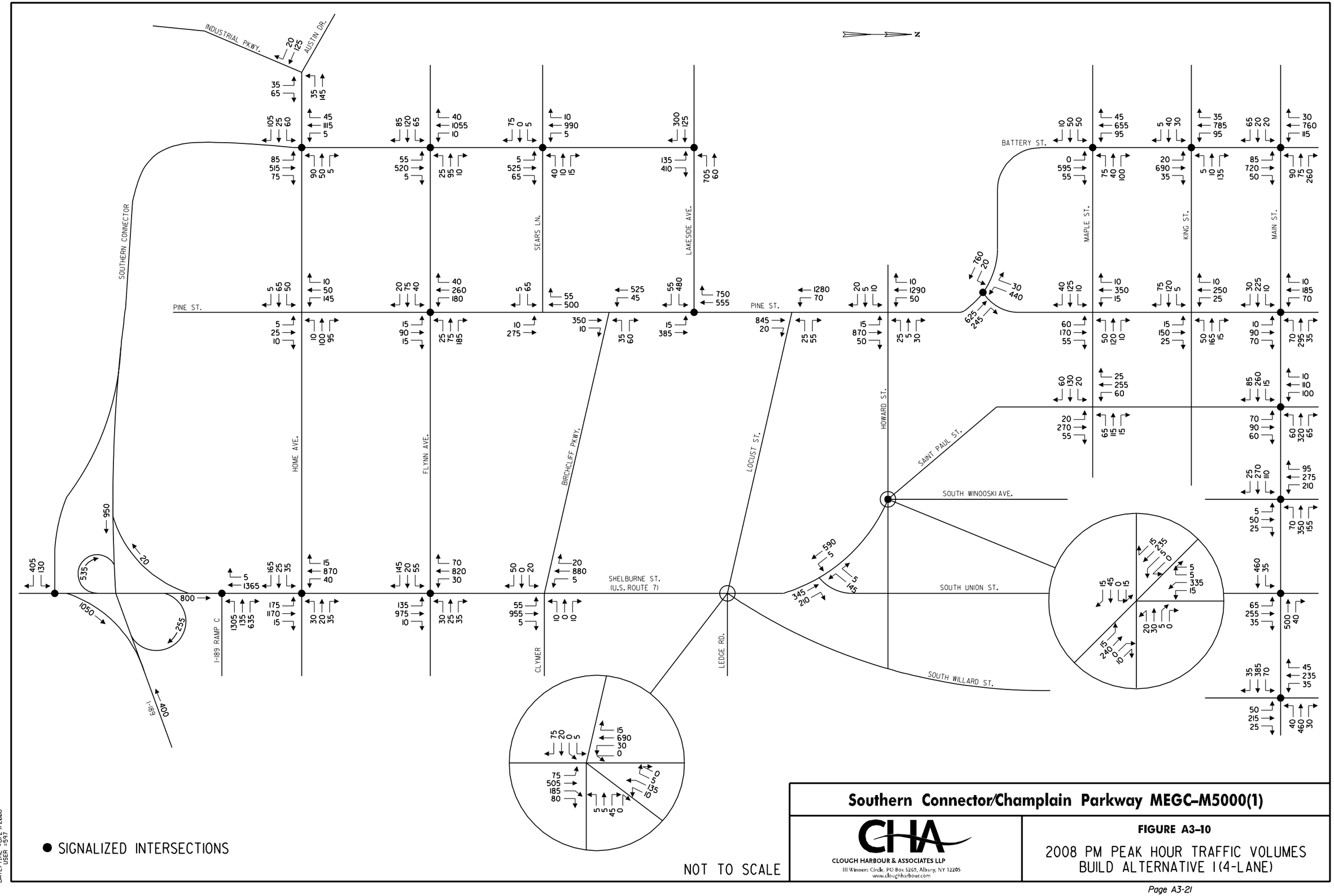

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FIGURE A3-10

2008 PM PEAK HOUR TRAFFIC VOLUMES
BUILD ALTERNATIVE 1(4-LANE)

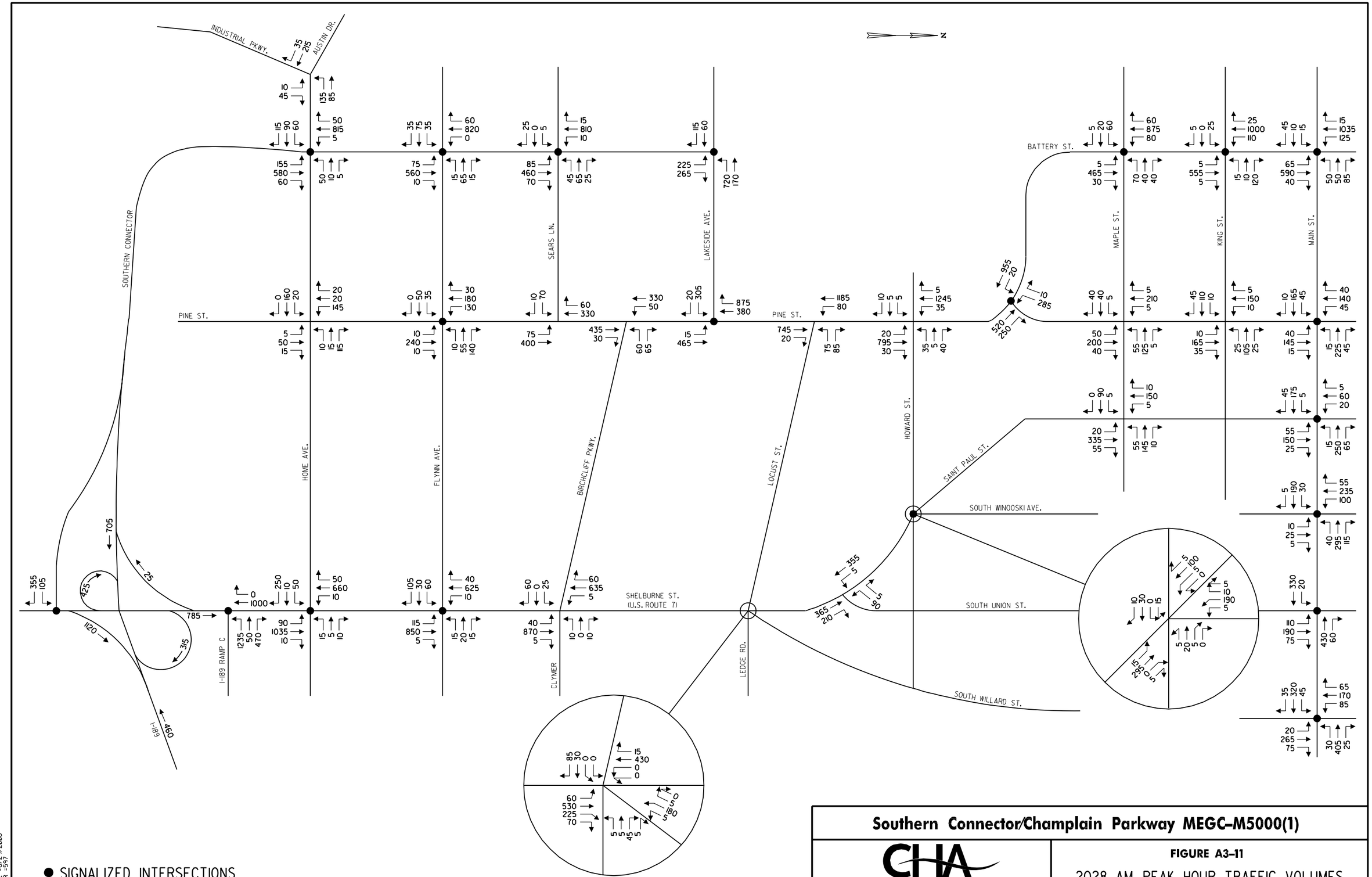

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FIGURE A3-11

2028 AM PEAK HOUR TRAFFIC VOLUMES
BUILD ALTERNATIVE I (4-LANE)

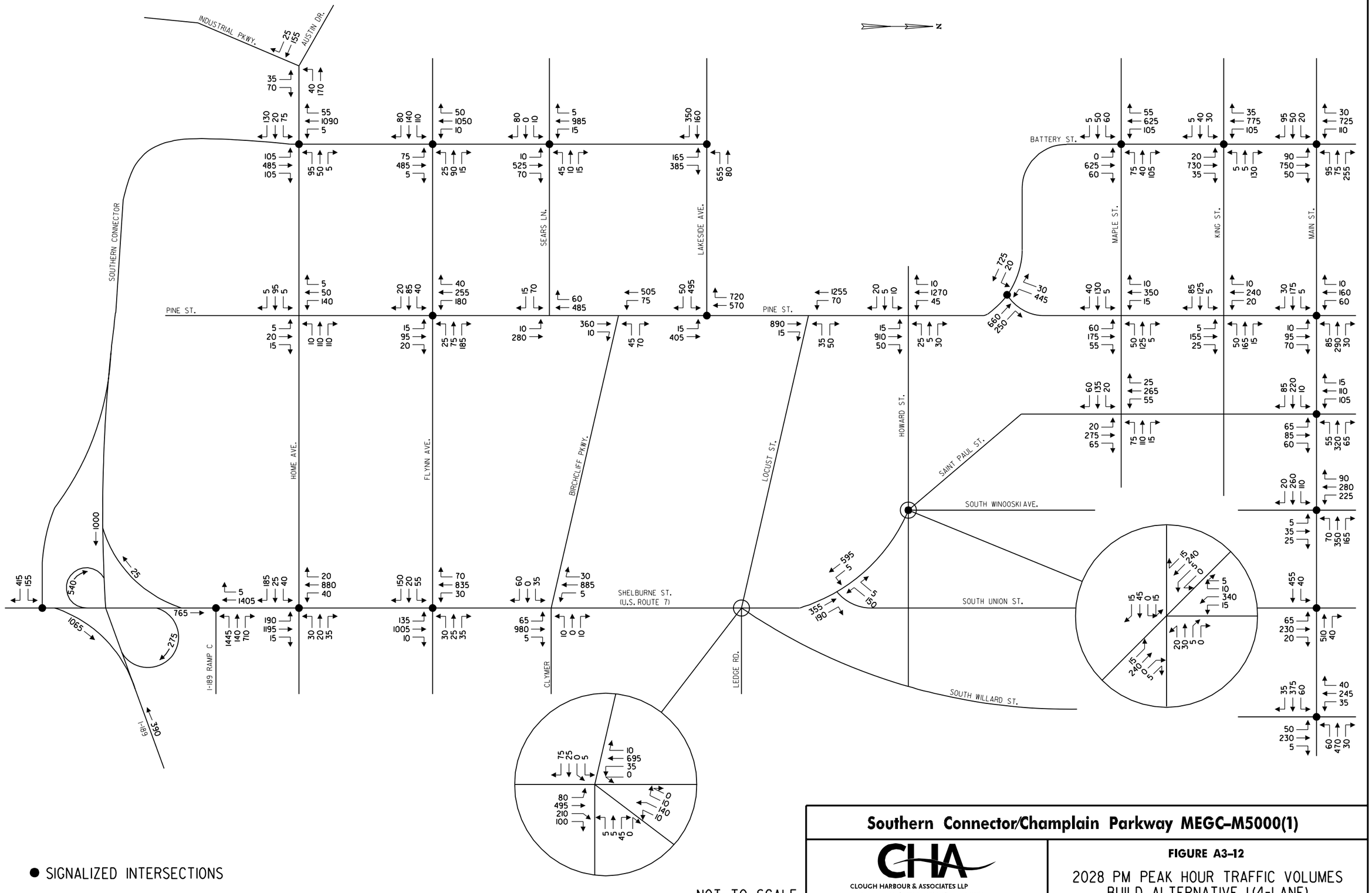

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FIGURE A3-12

2028 PM PEAK HOUR TRAFFIC VOLUMES
BUILD ALTERNATIVE 1 (4-LANE)

Traffic Operations

Table A3-6 presents the Build Alternative 1 (four-lane) results of the capacity analyses for the Primary study area intersections in the 2008 and 2028 design years. Figures A3-13 and A3-14 present the overall LOS at each study intersection within the Primary and Secondary study areas for the 2008 Design Year AM and PM peak hours, respectively. The LOS for the combined Primary and Secondary study areas in the 2028 design year AM and PM peak hours are shown on Figures A3-15 and A3-16. Detailed LOS and delay calculations are provided in Part C of this Appendix.

Table A3-6: Level of Service Summary – Build Alternative 1 (four-lane)

Location	2008 (ETC)		2028 (ETC+20)	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Signalized Intersections				
Battery Street & Main Street	B	B	B	B
Battery Street & King Street	B	B	B	B
Battery Street & Maple Street	B	B	B	B
Pine Street & Main Street	B	B	B	B
Pine Street & Battery Street Ext	B	C	B	C
Pine Street & Lakeside Avenue	B	C	C	C
Pine Street & Flynn Avenue	B	B	B	B
Connector & Lakeside Avenue	B	C	B	C
Connector & Sears Lane	B	A	B	B
Connector & Flynn Avenue	B	C	B	C
Connector & Home Avenue	B	B	B	B
AWSC (1) Intersections				
Pine Street & King Street	A	B	B	B
Pine Street & Maple Street	B	C	B	C
Pine Street & Home Avenue	A	A	A	A
TWSC (2) Intersections				
Pine Street & Howard Street				
Eastbound Approach	F	F	F	F
Westbound Approach	F	F	F	F
Pine Street & Locust Street				
Westbound Approach	F	F	F	F
Pine Street & Birchcliff Parkway				
Westbound Approach	C	C	C	D
Pine Street & Sears Lane				
Eastbound Approach	D	D	D	D

(1) AWSC = All-Way Stop Control

(2) *TWSC = Two-Way Stop Control (i.e., Side Street Stop). Note that the LOS for TWSC intersections represents the operation of the minor stop-controlled approach movements. Mainline movements are free-flow.*

2008 Design Year: Build Alternative 1 (four-lane)

Primary Study Area

The operations of the existing and proposed signalized intersections within the Primary study area are projected to operate at an overall LOS C or better in this alternative due to the additional capacity created by the four-lane roadway section, even with the modest increase in traffic volume in the corridor compared to the two-lane version of this alternative.

The operations of the AWSC intersections along Pine Street would operate at LOS C or better in this alternative, similar to the operations described for the two-lane version of this alternative.

The operations of the TWSC intersections would also be essentially the same as noted for the two-lane version of this alignment alternative (See Chapter 4 – Build Alternative 1). However, because of the greater gap requirements for traffic entering a four-lane facility than for a two-lane facility, the delay would be somewhat greater in this alternative for the stop-controlled movements at Locust Street and at Howard Street.

The LOS for the intersections south of Lakeside Avenue would be the same LOS D or better as in the two-lane version of this alignment alternative for both peak hours.

Secondary Study Area

The AWSC intersection in the surrounding study area would operate at a LOS C or better for both peak hours.

The operations of the AWSC and TWSC intersections in the Secondary study area would be comparable to those identified for the two-lane version of this alignment alternative, as described in Chapter 4.

2028 Design Year: Build Alternative 1 (four-lane)

Primary Study Area

The operations of the existing and proposed signalized intersections in the Primary study area would continue to operate at LOS C or better during the peak hours in the 20-year design horizon for this alternative.

The AWSC intersections would continue to operate at LOS C or better during both peak hours. These operations continue to represent an improvement from the No-Build Alternative.

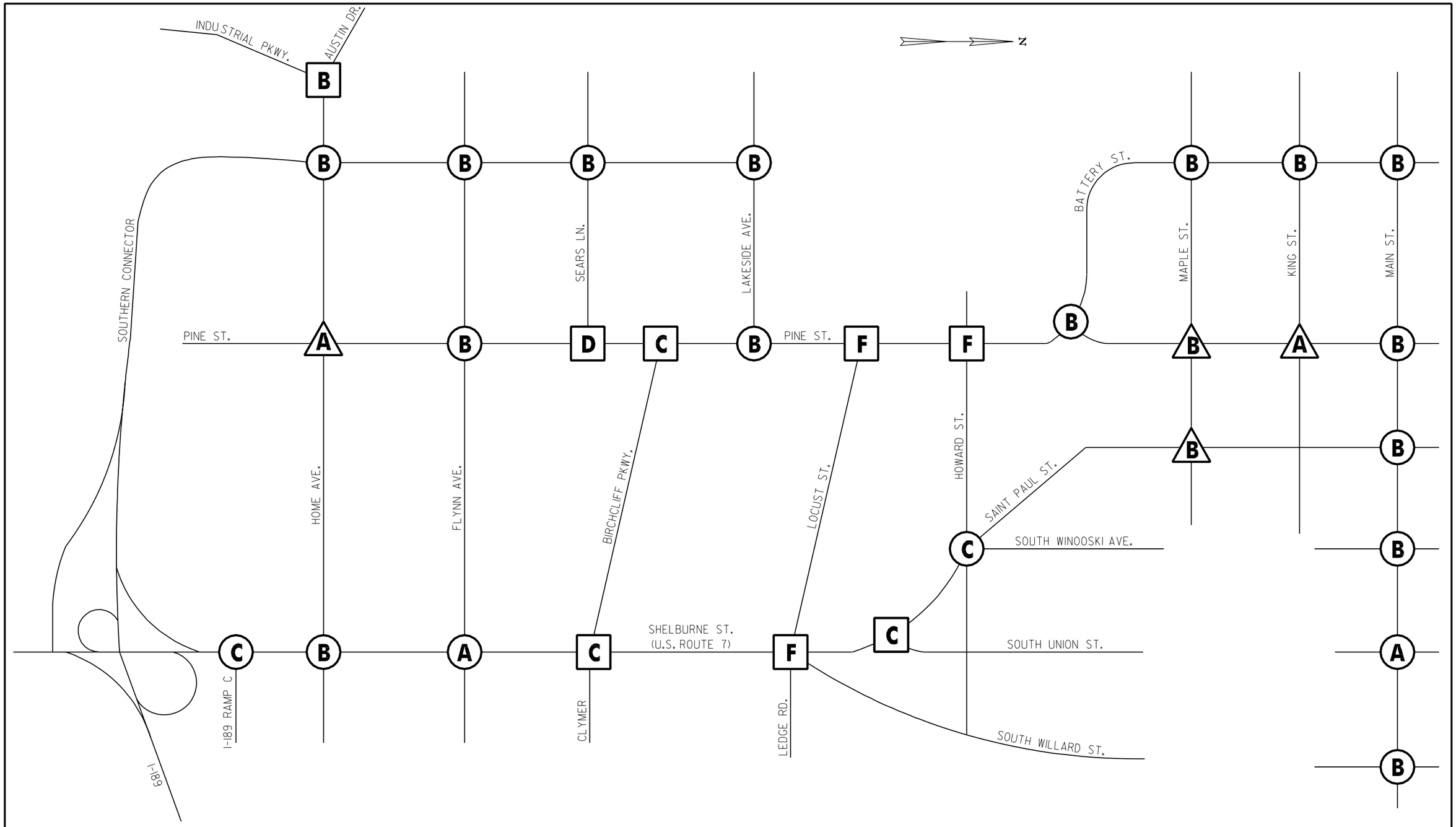

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FIGURE A3-13

2008 AM PEAK HOUR LEVEL OF SERVICE
BUILD ALTERNATIVE 1(4-LANE)

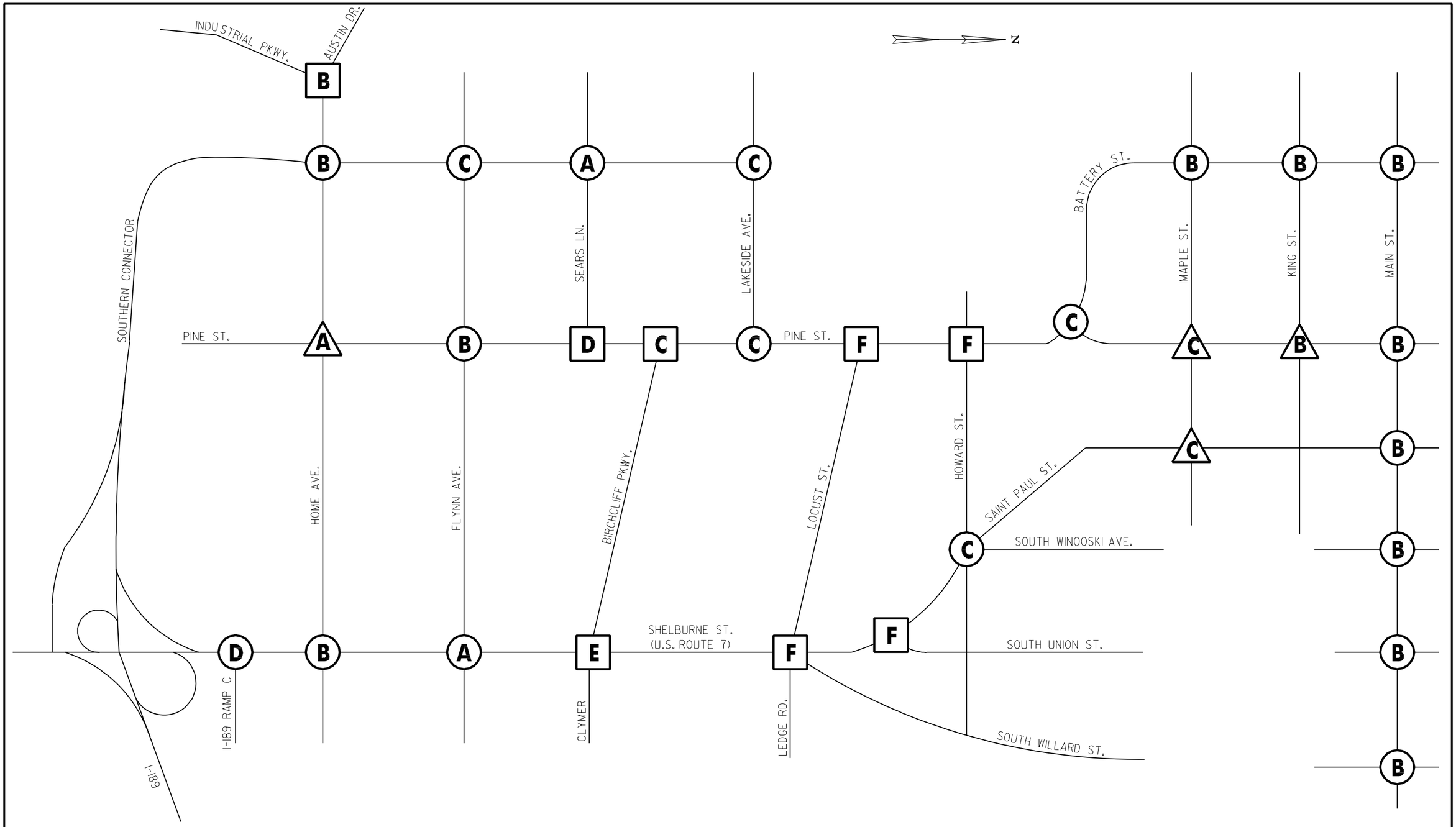

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FIGURE A3-14

2008 PM PEAK HOUR LEVEL OF SERVICE
BUILD ALTERNATIVE I (4-LANE)

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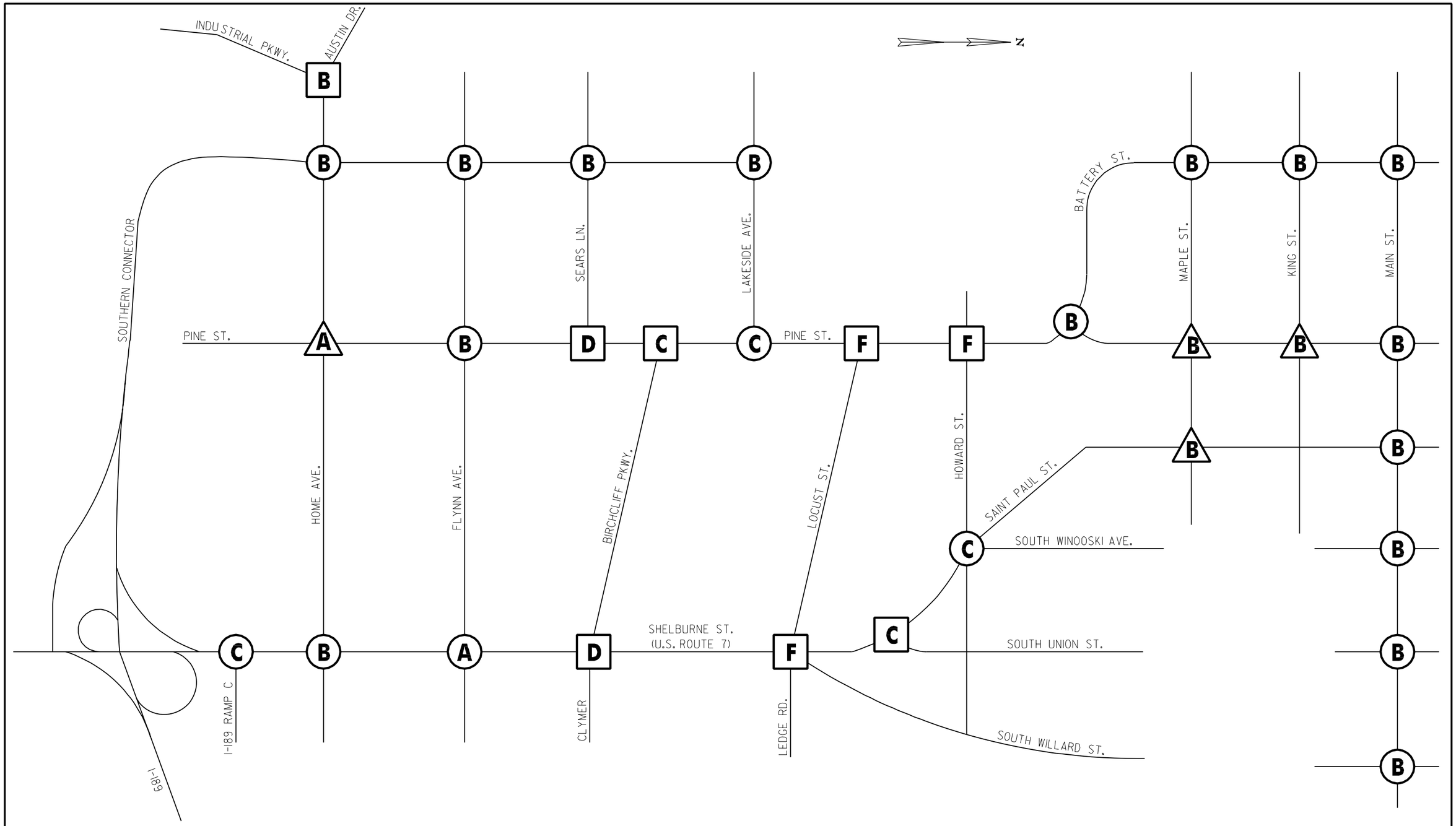

LEGEND

- (X) SIGNAL CONTROL (OVERALL LOS)
- ⚠ ALL-WAY STOP CONTROL (OVERALL LOS)
- [X] 2-WAY STOP CONTROL (MINOR STREET APPROACH LOS)

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FIGURE A3-15

2028 AM PEAK HOUR LEVEL OF SERVICE
BUILD ALTERNATIVE 1(4-LANE)

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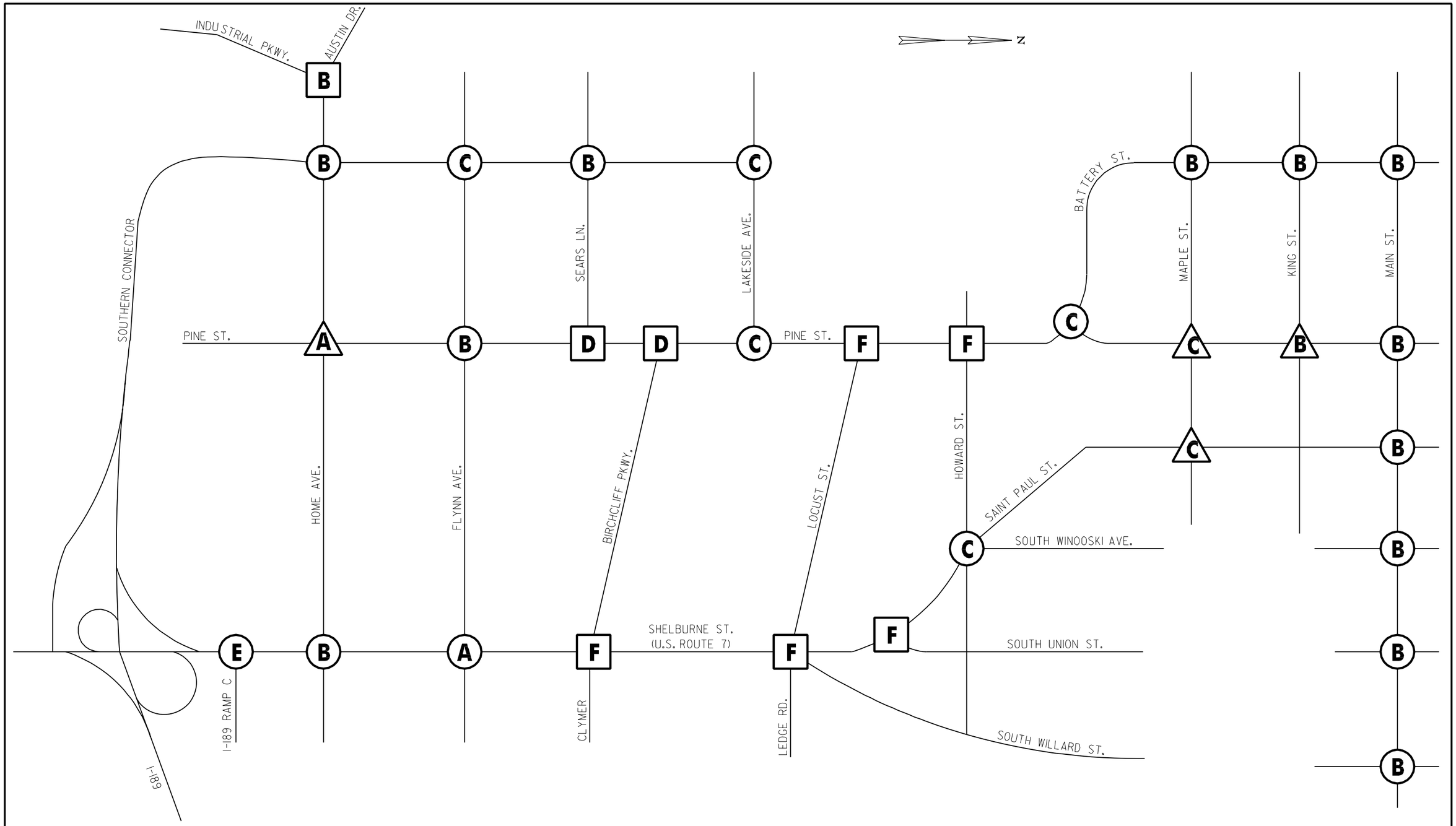

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FIGURE A3-16

2028 PM PEAK HOUR LEVEL OF SERVICE
BUILD ALTERNATIVE 1(4-LANE)

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In the Primary study area, the LOS F conditions for the stop-controlled approaches at the TWSC intersections along Pine Street at Howard Street and Locust Street would be comparable to the conditions in the 2008 design year, although the amount of delay would become substantial as a result of increased traffic volume flow on Pine Street. The stop-controlled approaches at Birchcliff Parkway and Sears Lane would operate at a LOS D or better.

Secondary Study Area

The operations of the signalized and unsignalized intersections within the Secondary study area in the 2028 design year for this alternative would be comparable to the operations described in Chapter 4 for the two-lane version of this alignment alternative.

Summary of Build Alternative 1 (four-lane) Analyses

Build Alternative 1 (four-lane) shows the same basic traffic patterns as the Build Alternative 1 described in Chapter 4. The primary difference between them is that Build Alternative 1 (four-lane) provides greater capacity and; therefore, induces more traffic volume to the corridor. However, the increased capacity accommodates these volumes at LOS that are substantially better than in the No-Build Alternative.

A3.2.4 C-1 Section and C-2 Section Only (two-lane)

This alternative involves the construction of the C-1 Section and C-2 Section to connect I-189 to Lakeside Avenue west of Pine Street. This alternative also includes intersection improvements at the intersection of Lakeside Avenue and Pine Street to accommodate the future traffic flow. Traffic on this alignment would access the CCD via the existing Pine Street and Battery Street corridors north of Lakeside Avenue. No additional improvements would be incorporated along Pine Street north of the Lakeside Avenue intersection. The C-1 Section and C-2 Section would be constructed as a two-lane roadway in this alternative.

Traffic Volumes

The projected ADT volumes in the Primary study area for the C-1 Section and C-2 Section Only are shown in Table A3-7. A review of this data indicates that traffic volumes on the section of Pine Street south of Lakeside Avenue would decrease substantially compared to the No-Build volumes. This change in volume is comparable to the patterns observed for other Build Alternatives. However, traffic volumes on the section of Pine Street north of Lakeside Avenue would increase by approximately 15% compared to the No-Build Alternative.

Table A3-7: Average Daily Traffic Volume Summary: C-1 Section and C-2 Section Only

Location	C-1 Section & C-2 Section Only	
	2008 (ETC)	2028 (ETC+20)
Southern Connector/Champlain Parkway: Home Avenue to Lakeside Avenue	12,800	13,200
Pine Street: Home Avenue to Flynn Avenue	2,700	2,800
Pine Street: Flynn Avenue to Lakeside Avenue	7,300	7,600
Pine Street: Lakeside Avenue to Maple Street	15,900	16,300
Pine Street: Maple Street to Main Street	7,300	7,300
Battery Street: Maple Street to Main Street	8,400	8,400
Lakeside Avenue: Connector to Pine Street	10,400	11,000
Maple Street: Pine Street to Battery Street	6,800	6,800
King Street: Pine Street to Battery Street	4,300	4,300
Main Street: Pine Street to Battery Street	9,400	9,400

The design year peak hour volumes produced from the travel demand modeling for the C-1 Section and C-2 Section Only are presented in Figures A3-17 through A3-20, as follows:

- Figure A3-17: 2008 AM C-1 Section and C-2 Section Only
- Figure A3-18: 2008 PM C-1 Section and C-2 Section Only
- Figure A3-19: 2028 AM C-1 Section and C-2 Section Only
- Figure A3-20: 2028 PM C-1 Section and C-2 Section Only

The following traffic flow trends are observed from these peak hour volumes:

- The Pine Street at Maple Avenue intersection would be a critical congestion point for traffic access and circulation to the CCD, similar to the trends observed for the No-Build Alternative.

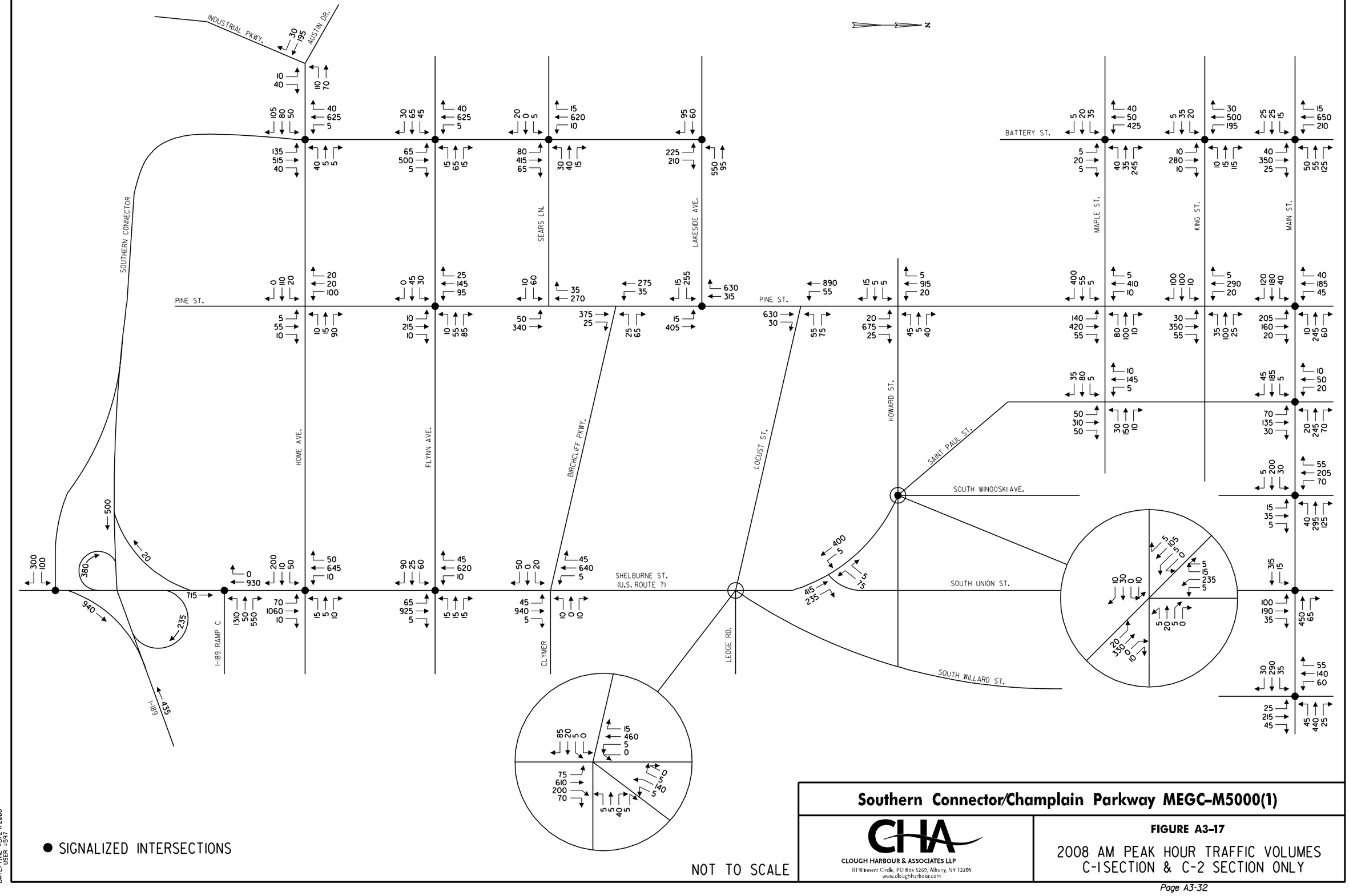

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FIGURE A3-17

2008 AM PEAK HOUR TRAFFIC VOLUMES
C-1 SECTION & C-2 SECTION ONLY

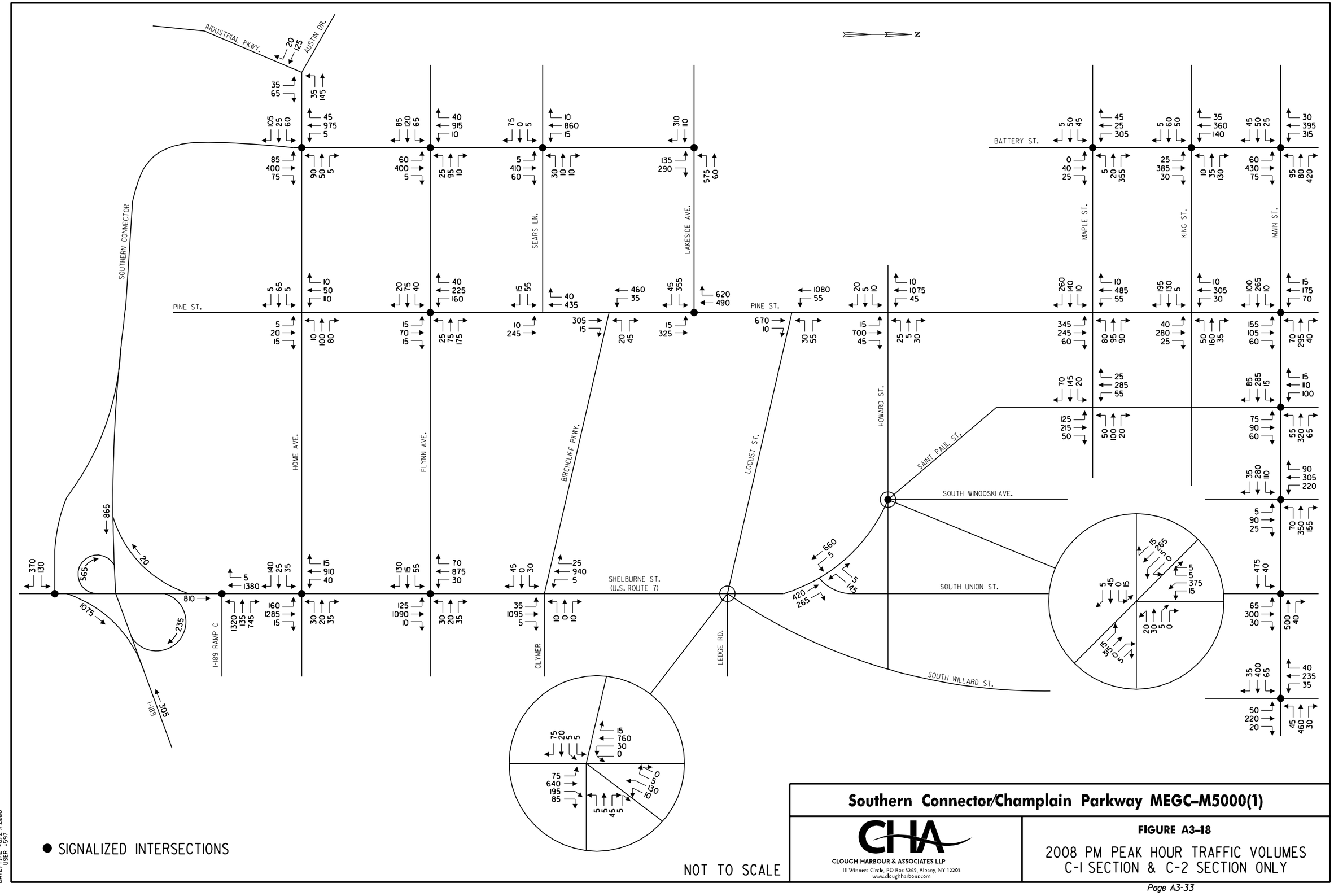

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FIGURE A3-18

2008 PM PEAK HOUR TRAFFIC VOLUMES
C-1 SECTION & C-2 SECTION ONLY

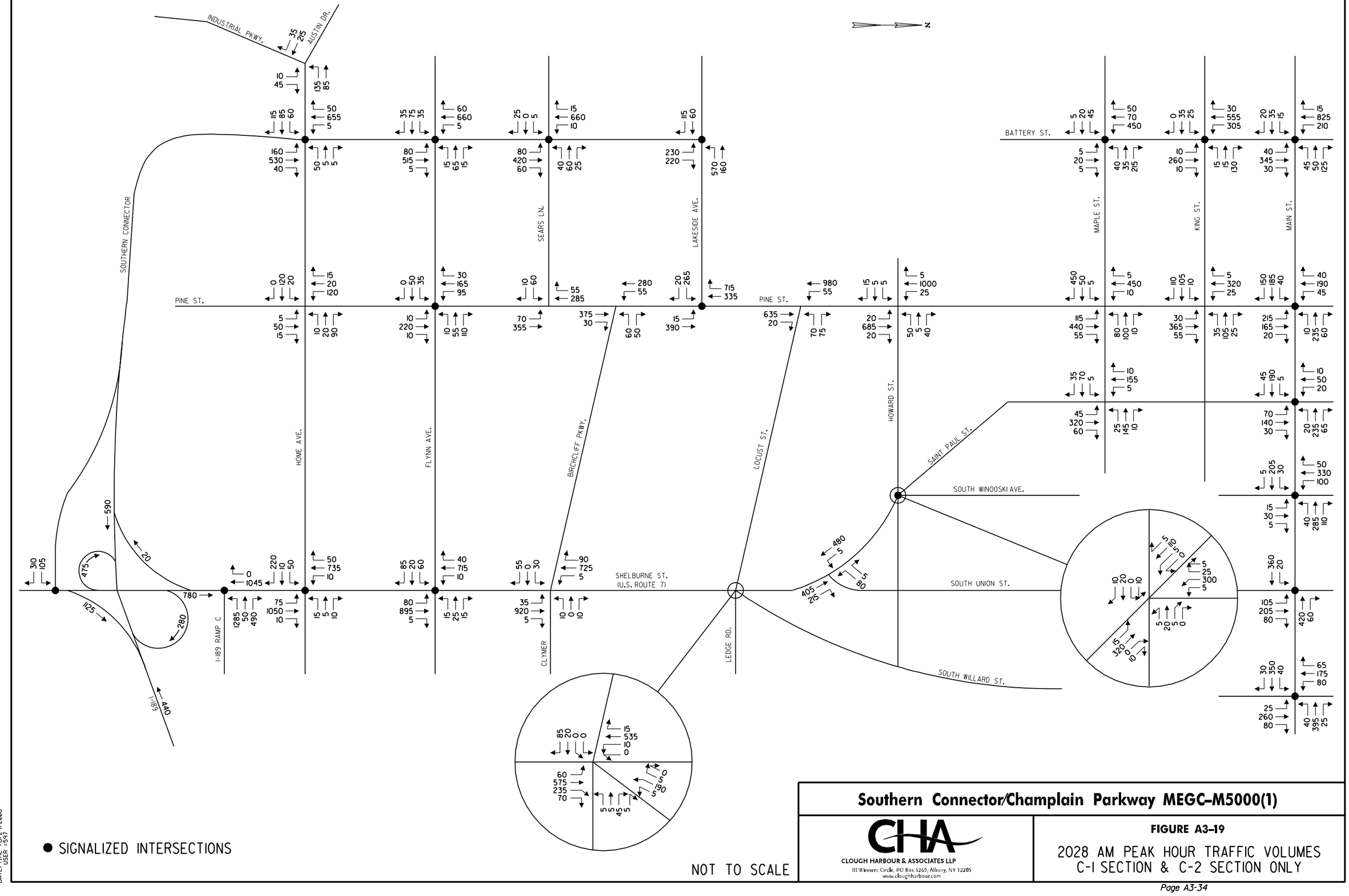

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FIGURE A3-19

2028 AM PEAK HOUR TRAFFIC VOLUMES
C-1 SECTION & C-2 SECTION ONLY

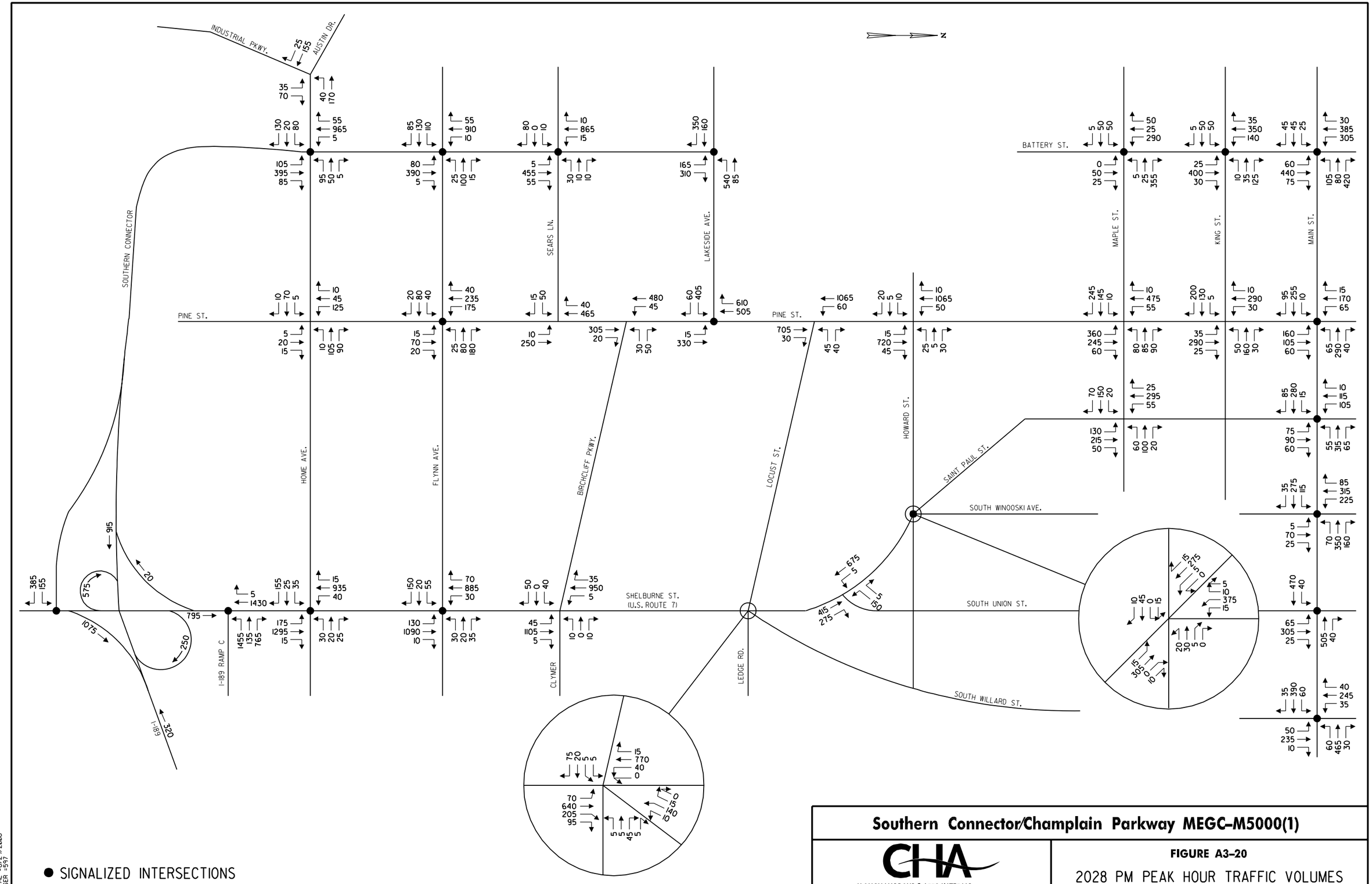

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FIGURE A3-20

2028 PM PEAK HOUR TRAFFIC VOLUMES
C-1 SECTION & C-2 SECTION ONLY

- Home Avenue and Flynn Avenue would see a substantial reduction in traffic volume as these roadways convert to a primary function of local access, and through traffic is diverted to the Southern Connector/Champlain Parkway.

- This alternative would provide improved access to existing industrial facilities in the project area, but accessibility to the CCD for freight movements would be essentially unchanged from No-Build Alternative.

- Traffic volumes on the section of Pine Street north of Lakeside Avenue would increase by 10-15% from the No-Build Alternative.

- The section of Pine Street between Maple Street and Main Street would continue to function as a regional access to the CCD as in the No-Build Alternative.

Traffic Operations

Table A3-8 presents the results of the capacity analyses for the Primary study area intersections in the 2008 and 2028 design years, for the C-1 Section and C-2 Section Only alternative. Figures A3-21 and A3-22 present the overall LOS at each study intersection within the Primary and Secondary study areas for the 2008 Design Year AM and PM peak hours, respectively. The LOS for the combined Primary and Secondary study areas in the 2028 design year AM and PM peak hours are shown on Figures A3-23 and A3-24. Detailed LOS and delay calculations are provided in Part C of this Appendix.

2008 Design Year: C-1 Section and C-2 Section Only

Primary Study Area

The existing and proposed signalized intersections within the Primary study area would all operate at LOS D or better. At most locations, these operations would be LOS B or C. Traffic volumes would increase at the intersection of Pine Street and Lakeside Avenue as a result of the C-1 Section and C-2 Section Only alternative. Even with this change in volume, the intersection would operate at LOS C or better for both peak hours with the proposed geometric and signal-control improvements.

In this alternative, the AWSC intersection of Pine Street and Maple Street in the Primary study area is anticipated to remain a critical junction for traffic moving to and from the CCD from Pine Street, as it is in the No-Build Alternative. The increased turning movement volumes at this intersection would exacerbate existing LOS F congestion at this location. The increased volume on the section of Pine Street between Maple Street and Main Street would also produce LOS E operations during the PM peak hour at the AWSC intersection of Pine Street and King Street.

Table A3-8: Level of Service Summary – C-1 Section and C-2 Section Only

Location	2008 (ETC)		2028 (ETC+20)	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Signalized Intersections				
Battery Street & Main Street	B	C	B	C
Battery Street & King Street	B	B	C	B
Battery Street & Maple Street	B	B	B	B
Pine Street & Main Street	B	B	B	B
Pine Street & Lakeside Avenue	C	C	C	C
Pine Street & Flynn Avenue	B	B	B	B
Connector & Lakeside Avenue	B	C	B	C
Connector & Sears Lane	B	B	B	B
Connector & Flynn Avenue	B	D	C	E
Connector & Home Avenue	C	C	C	C
AWSC (1) Intersections				
Pine Street & King Street	C	E	D	E
Pine Street & Maple Street	F	F	F	F
Pine Street & Home Avenue	A	A	A	A
TWSC (2) Intersections				
Pine Street & Howard Street				
Eastbound Approach	F	F	F	F
Westbound Approach	F	F	F	F
Pine Street & Locust Street				
Westbound Approach	F	F	F	F
Pine Street & Birchcliff Parkway				
Westbound Approach	B	B	C	C
Pine Street & Sears Lane				
Eastbound Approach	C	C	C	C

(1) AWSC = All-Way Stop Control

(2) *TWSC = Two-Way Stop Control (i.e., Side Street Stop). Note that the LOS for TWSC intersections represents the operation of the minor stop-controlled approach movements. Mainline movements are free-flow.*

Traffic volumes south of Lakeside Avenue would be diverted onto the Southern Connector/Champlain Parkway and the AWSC intersection of Pine Street and Home Avenue would experience a substantial improvement of operations, with LOS A conditions during both peak hours.

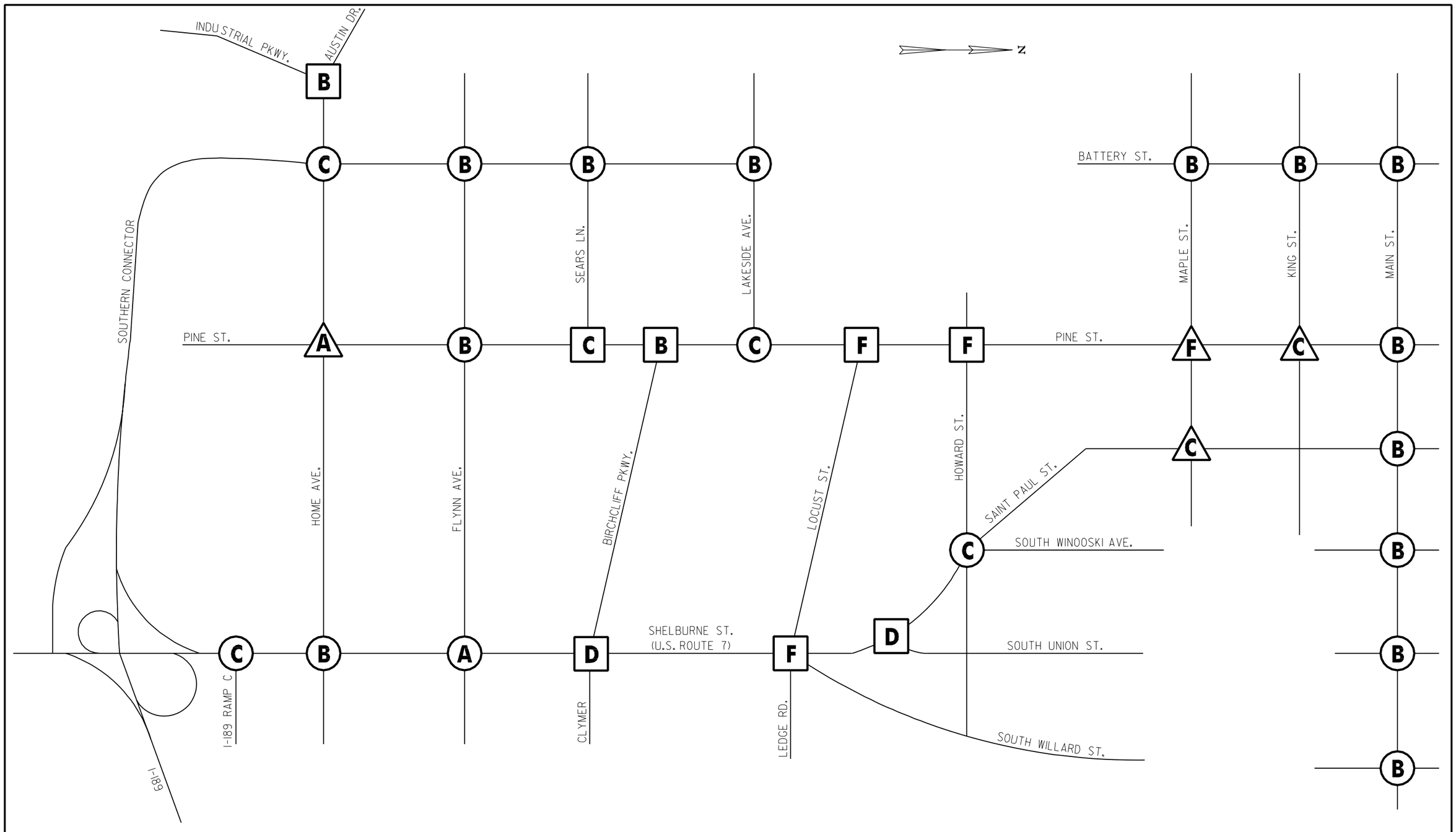

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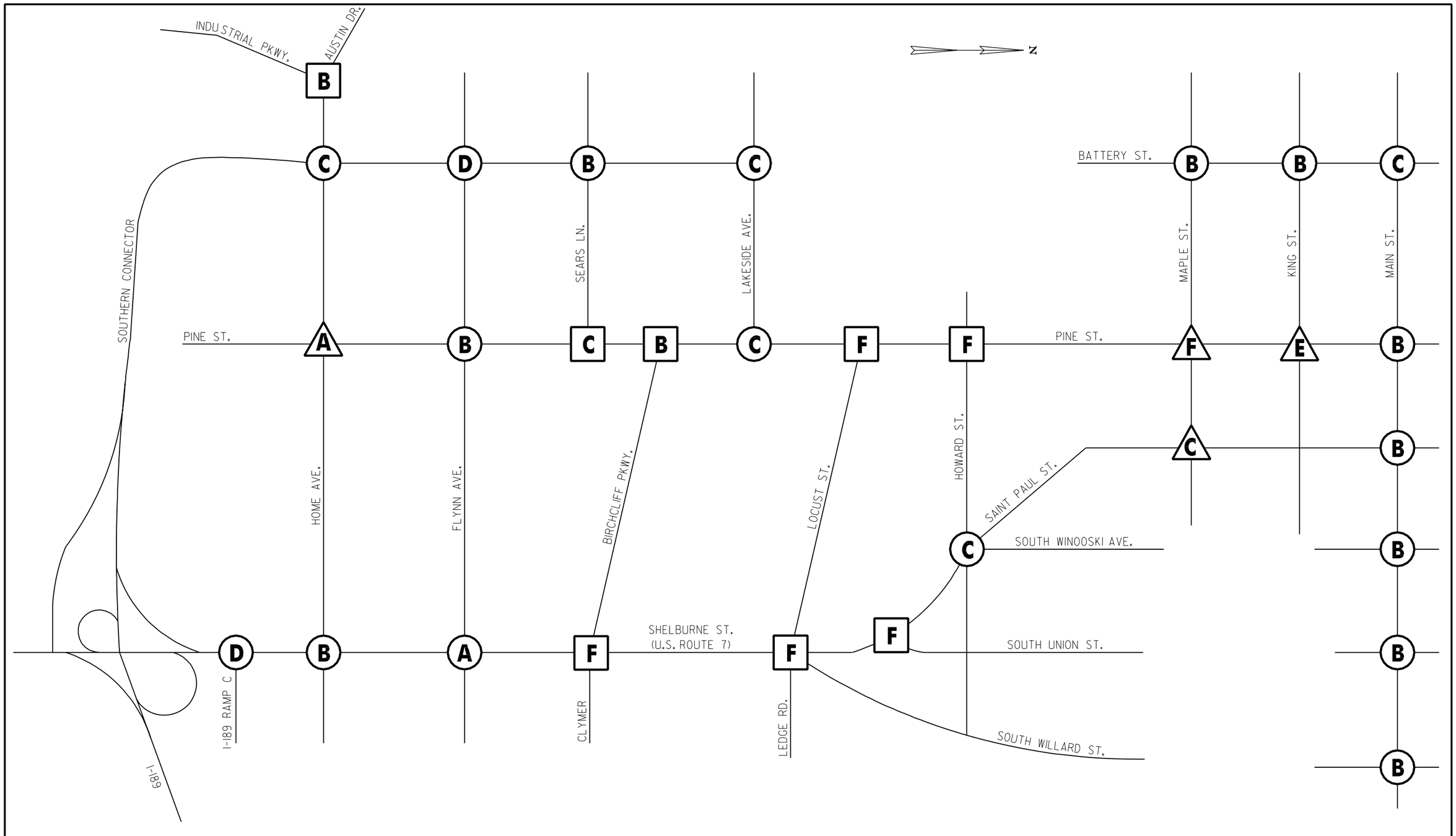
FIGURE A3-21

2008 AM PEAK HOUR LEVEL OF SERVICE
C-1 SECTION & C-2 SECTION ONLY



LEGEND

- (X) SIGNAL CONTROL (OVERALL LOS)
- ⚠ ALL-WAY STOP CONTROL (OVERALL LOS)
- [X] 2-WAY STOP CONTROL (MINOR STREET APPROACH LOS)

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FIGURE A3-22

2008 PM PEAK HOUR LEVEL OF SERVICE
C-1 SECTION & C-2 SECTION ONLY

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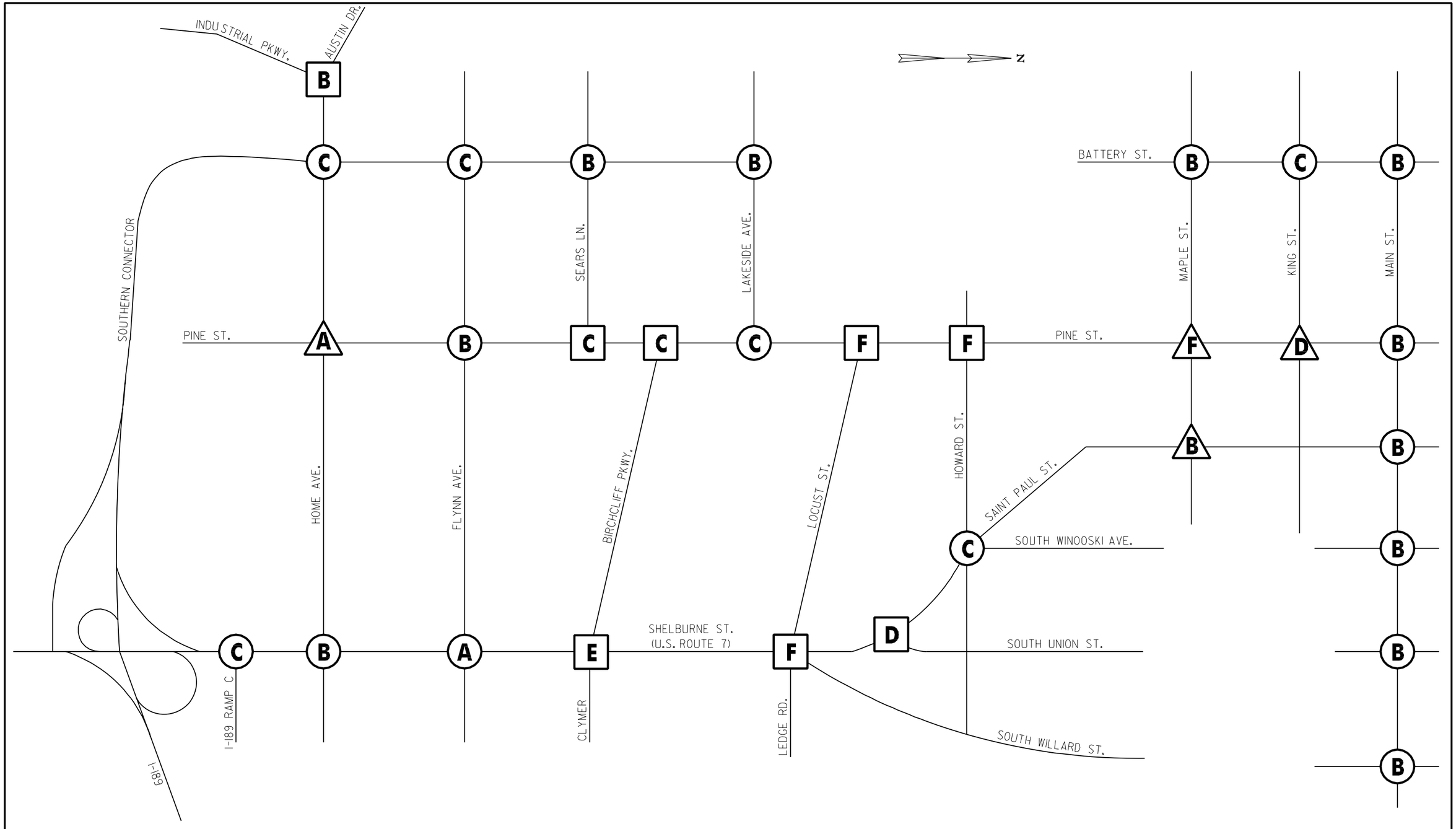

LEGEND

- (X) SIGNAL CONTROL (OVERALL LOS)
- ⚠ ALL-WAY STOP CONTROL (OVERALL LOS)
- [X] 2-WAY STOP CONTROL (MINOR STREET APPROACH LOS)

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FIGURE A3-23

2028 AM PEAK HOUR LEVEL OF SERVICE
C-1 SECTION & C-2 SECTION ONLY

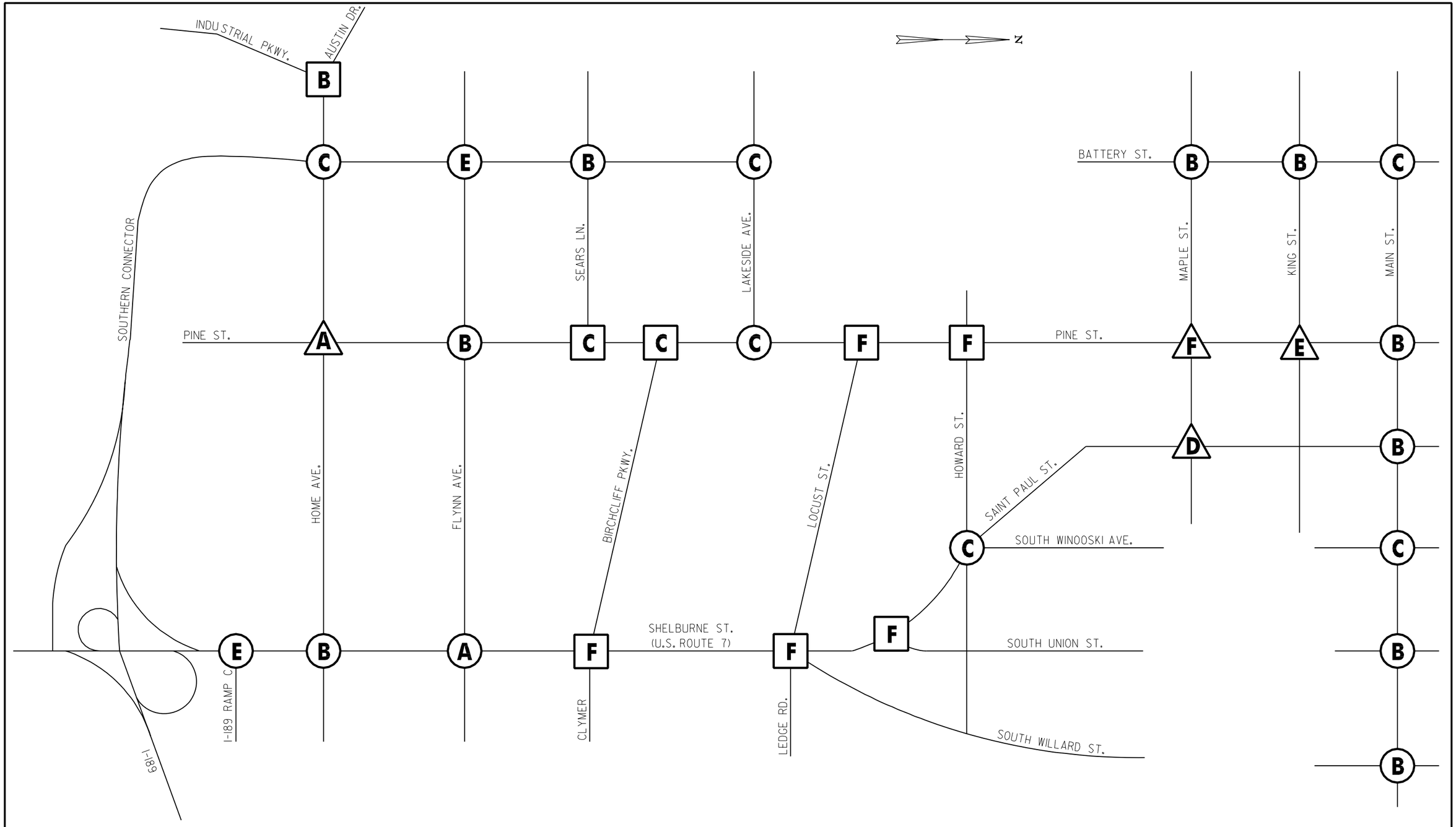

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FIGURE A3-24

2028 PM PEAK HOUR LEVEL OF SERVICE
C-1 SECTION & C-2 SECTION ONLY

The operations of the TWSC intersections along Pine Street between Lakeside Avenue and Maple Street would continue to operate at LOS F as in the No-Build Alternative during peak hours, but with a general increase in delay due to the additional volume on Pine Street. The LOS for the intersections south of Lakeside Avenue would be LOS C, which is an improvement from the No-Build Alternative.

Secondary Study Area

The signalized intersections within the Secondary study area would operate at LOS D or better in this alternative, with most operating at LOS C or better. These LOS of service are generally better than the operations in the No-Build Alternative.

The operations of the unsignalized intersections within the Secondary study area would be essentially the same as noted for the other Build Alternatives. Although there is some improvement at these locations associated with reductions in delay compared to the No-Build Alternative, these changes are modest and the LOS would continue to be LOS E or F during one or both peak hours for the stop-controlled movements.

2028 Design Year: C-1 Section and C-2 Section Only

Primary Study Area

The signalized intersections within the Primary study area would generally operate at acceptable LOS C or better during both peak hours in this 20-year design horizon. However, signs of congestion would begin to be show along the Southern Connector/Champlain Parkway, as evidenced by a LOS E operation at the intersection of the Southern Connector/Champlain Parkway and Flynn Avenue. These operations are consistent with those identified for the Build Alternative 1.

The volume of traffic projected to move through the intersection of Pine Street and Maple Street and Pine Street and King Street would continue to compound the level of congestion at these AWSC intersections, where the operations would be LOS E or F during one or peak hours.

In the Primary study area, the LOS F conditions for the stop-controlled approaches at the TWSC intersections of Pine Street at Howard Street and Locust Street would be comparable to the conditions in the 2008 design year, although the amount of delay would increase as a result of increased traffic volume flow on Pine Street. The Stop-sign controlled approaches of Sears Lane and Birchcliff Parkway to Pine Street would continue to operate at a LOS C during the 2028 peak hours.

Secondary Study Area

The existing signalized intersections within the Secondary study area would generally operate at acceptable LOS C or better through this design horizon. The one exception to this is the intersection of U.S. Route 7 at I-189 Ramp C, which would operate at LOS E during the PM peak hour. This is consistent with the operations for other Build Alternatives and is an improvement from the LOS F operations in the No-Build Alternative.

The operations of the stop-controlled intersections would be comparable to the operations in the No-Build Alternative, with LOS E/F conditions for the stop-controlled approaches during peak hours.

Summary of the C-1 Section and C-2 Section Only Analyses

The C-1 Section and C-2 Section Only alternative would improve mobility to the CCD compared to the No-Build Alternative, although not to the extent of other alternatives. This alternative would also be effective in reducing the movement of through traffic in the residential neighborhoods on the south side of the project area. The intersection of Pine Street and Maple Avenue would be a critical congestion point for traffic access and circulation to the CCD, similar to the No-Build Alternative. Increases in traffic volumes in the north section of Pine Street, from Maple Street to Main Street, would contribute to reduced LOS in this part of the project area compared to the No-Build Alternative.

Traffic operations along the Southern Connector/Champlain Parkway would be LOS D or better during peak hours through the 20-year design horizon in the C-1 Section and C-2 Section Only alternative, except at the intersection of the Southern Connector/Champlain Parkway and Flynn Avenue. The operations at this intersection would be LOS E in the PM peak hour of the 2028 design year. This condition is the same as for Build Alternative 1 as described in Chapter 4.

Traffic operations at the unsignalized intersections along Pine Street south of Lakeside Avenue would improve compared to the No-Build Alternative as a result of the traffic diversions from this area to the C-1 Section and C-2 Section of the Southern Connector/Champlain Parkway.

The C-1 Section and C-2 Section Only alternative does address some of the mobility objectives of the project and provides improved access to the industrial facilities within the corridor when compared to the No-Build Alternative. However, this alternative would increase traffic volumes along the northern section of Pine Street, which would result in recurrent congestion in the area of Maple Street and King Street during peak hours.

A3.3 Comparison of Alternatives - Traffic

The following is a summary overview and comparison of the traffic volumes and operations for each of the project alternatives.

Table A3-9 summarizes the projected ADT volumes for each of the alternatives in the 2008 and 2028 design years. A review of the data shown in Table A3-9 indicates that traffic volumes on Pine Street between Lakeside Avenue and Maple Street would increase by approximately 15-40% in all scenarios, compared to the No-Build Alternative. The one exception would be the Null Alternative in which traffic volumes along that section of Pine Street would see a 50% reduction. Traffic volumes on the section of Pine Street south of Lakeside Avenue are projected to decrease by 50% or more in all scenarios. Traffic volumes on the section of Pine Street from Maple Street north are projected to increase in Build Alternative 2 by approximately 10%. The proposed Battery Street Extension from Maple Street to Pine Street near Marble Avenue included in the Build Alternative 1 and Build Alternative 1 (four-lane) would divert traffic from this north section of Pine Street, reducing traffic volumes by 20-25%.

Tables A3-10 and A3-11 summarize the signalized and unsignalized intersection analysis for each of the alternatives in the 2008 and 2028 design years. These tables show the overall LOS for the intersection or each unsignalized minor street approach. As shown in the table, the main differences between the alternatives focus on Pine Street from Lakeside Avenue to Main Street. All the alternatives improve operations along the southern section of Pine Street. All the alternatives except for C-1 Section and C-2 Section Only alternative and Build Alternative 2 improve operations along the northern section of Pine Street (Maple Street to Main Street). Only the Null Alternative improves operations along the entire section of Pine Street.

Summary of Comparisons

No-Build Alternative

In the No-Build Alternative, traffic would continue to use Home Avenue and Flynn Avenue to travel between U.S. Route 7 and Pine Street. Traffic increases along the Pine Street and U.S. Route 7 corridor would also produce increased congestion and queuing, especially for traffic entering these corridors from the unsignalized side streets. These conditions would result in LOS F operations for these traffic movements. Left-turn movements from Pine Street onto the side streets would also contribute to congestion along Pine Street due to reductions in the available gaps in opposing travel direction resulting from increased volume and uncoordinated flow.

Traffic volumes would increase and the congestion experienced at the intersection of Pine Street and Maple Street would become a constraint on the existing corridor. This intersection is the focal point of the CCD area and it would control the operations of traffic entering/exiting the CCD. The AWSC intersection of Pine Street with Maple Street is projected to operate at an overall LOS F during all of the future No-Build AM and PM peak periods. The AWSC intersection of Pine Street with Home Avenue is projected to operate at an overall LOS E during the 2008 AM peak hour, and then at LOS F during all other No-Build years and peak periods.

These operating conditions represent a substantial corridor capacity constraint, which would result in recurrent system-wide congestion and excess delay. The No-Build Alternative would not meet the purpose and need of the project.

Table A3-9: Average Daily Traffic Volume Summary: Comparison of Alternatives

Location	No-Build Alternative		Null Alternative		Build Alternative 1		Build Alternative 1 (4-lane)		C-1 Section & C-2 Section Only		Build Alternative 2	
	2008	2028	2008	2028	2008	2028	2008	2028	2008	2028	2008	2028
Southern Connector/Champlain Parkway: Home Avenue to Lakeside Avenue	--	--	19,600	19,700	13,500	13,800	15,100	15,100	12,800	13,200	12,800	13,200
Pine Street: Home Avenue to Flynn Avenue	9,600	10,300	2,600	2,800	3,100	3,100	3,300	3,300	2,700	2,800	2,700	2,800
Pine Street: Flynn Avenue to Lakeside Avenue	16,300	17,500	6,400	6,500	8,200	8,200	8,400	8,500	7,300	7,600	7,300	7,600
Pine Street: Lakeside Avenue to Maple Street	14,000	14,900	6,800	6,900	18,000	18,100	19,900	20,000	15,900	16,300	15,900	16,300
Pine Street: Maple Street to Main Street	6,600	6,700	4,000	4,000	5,200	5,200	5,300	5,300	7,300	7,300	8,500	8,500
Battery Street: Maple Street to Main Street	7,400	7,600	18,700	18,700	13,000	13,200	15,100	15,400	8,400	8,400	7,000	7,000
Lakeside Avenue: Connector to Pine Street	6,100	7,500	5,200	5,700	11,100	11,600	13,000	13,000	10,400	11,000	10,400	11,000
Maple Street: Pine Street to Battery Street	5,900	6,100	3,900	4,100	3,200	3,200	3,300	3,400	6,800	6,800	4,800	4,800
King Street: Pine Street to Battery Street	4,100	4,100	3,500	3,500	3,100	3,100	3,200	3,300	4,300	4,300	5,500	5,600
Main Street: Pine Street to Battery Street	8,900	9,100	5,100	5,100	5,700	5,700	6,000	6,000	9,400	9,400	10,400	10,400

Table A3-10: Level of Service Summary - 2008 (ETC) Design Year												
Location	**AM Peak Hour**						**PM Peak Hour**					
	No-Build	Null Alt	Build Alt. 1	Build Alt. 1 (4-lane)	C-1 & C-2 Only	Build Alt. 2	No-Build	Null Alt	Build Alt. 1	Build Alt. 1 (4-lane)	C-1 & C-2 Only	Build Alt. 2
Signalized Intersections												
Battery Street & Main Street	B	B	B	B	B	C	B	B	C	B	C	C
Battery Street & King Street	B	B	C	B	B	B	B	B	C	B	B	B
Battery Street & Maple Street	B	B	B	B	B	B	B	C	C	B	B	B
Pine Street & Main Street	B	B	B	B	B	C	B	B	B	B	B	C
Pine Street & Battery Street Ext	Note 1	Note 1	B	B	Note 1	Note 1	Note 1	Note 1	C	C	Note 1	Note 1
Pine Street & Lakeside Avenue	A	B	C	B	C	C	B	B	C	C	C	C
Pine Street & Flynn Avenue	B	B	B	B	B	B	C	B	B	B	B	B
Connector & Lakeside Avenue	Note 1	D	C	B	B	B	Note 1	D	B	C	C	C
Connector & Sears Lane	Note 1	B	B	B	B	B	Note 1	A	B	A	B	B
Connector & Flynn Avenue	Note 1	B	B	B	B	B	Note 1	C	D	C	D	D
Connector & Home Avenue	Note 1	B	B	B	C	C	Note 1	B	D	B	C	C
AWSC (1) Intersections												
Pine Street & King Street	C	A	A	A	C	B (3)	C	B	B	B	E	C (3)
Pine Street & Maple Street	F	B	B	B	F	C (3)	F	B	C	C	F	D (3)
Pine Street & Home Avenue	F	A	A	A	A	A	F	A	A	A	A	A
TWSC (2) Intersections												
Pine Street & Howard Street												
Eastbound Approach	D	B	F	F	F	F	F	C	F	F	F	F
Westbound Approach	F	C	F	F	F	F	F	D	F	F	F	F
Pine Street & Locust Street												
Westbound Approach	F	C	F	F	F	F	F	C	F	F	F	F
Pine Street & Birchcliff Parkway												
Westbound Approach	E	B	C	C	B	B	F	B	C	C	B	B
Pine Street & Sears Lane												
Eastbound Approach	D	C	C	D	C	C	F	C	C	D	C	C

(1) AWSC = All-Way Stop Control
(2) TWSC = Two-Way Stop Control (i.e., Side Street Stop)
(3) This intersection is signalized in this alternative

Notes:
1- this intersection does not exist in this alternative

Table A3-11: Level of Service Summary - 2028 (ETC) Design Year												
Location	**AM Peak Hour**						**PM Peak Hour**					
	No-Build	Null Alt	Build Alt. 1	Build Alt. 1 (4-lane)	C-1 & C-2 Only	Build Alt. 2	No-Build	Null Alt	Build Alt. 1	Build Alt. 1 (4-lane)	C-1 & C-2 Only	Build Alt. 2
Signalized Intersections												
Battery Street & Main Street	B	B	B	B	B	C	C	B	C	B	C	C
Battery Street & King Street	C	B	C	B	C	C	B	B	C	B	B	B
Battery Street & Maple Street	B	C	B	B	B	B	B	C	C	B	B	B
Pine Street & Main Street	B	B	B	B	B	C	B	B	B	B	B	C
Pine Street & Battery Street Ext	Note 1	Note 1	B	B	Note 1	Note 1	Note 1	Note 1	C	C	Note 1	Note 1
Pine Street & Lakeside Avenue	A	C	D	C	C	C	C	B	C	C	C	C
Pine Street & Flynn Avenue	B	B	B	B	B	B	F	B	B	B	B	B
Connector & Lakeside Avenue	Note 1	D	B	B	B	B	Note 1	D	C	C	C	C
Connector & Sears Lane	Note 1	C	B	B	B	B	Note 1	A	B	B	B	B
Connector & Flynn Avenue	Note 1	B	B	B	C	C	Note 1	C	F	C	E	E
Connector & Home Avenue	Note 1	B	C	B	C	C	Note 1	B	D	B	C	C
AWSC (1) Intersections												
Pine Street & King Street	C	B	B	B	D	B (3)	D	B	B	B	E	C (3)
Pine Street & Maple Street	F	B	B	B	F	C (3)	F	B	C	C	F	D (3)
Pine Street & Home Avenue	F	A	A	A	A	A	F	A	A	A	A	A
TWSC (2) Intersections												
Pine Street & Howard Street												
Eastbound Approach	E	C	F	F	F	F	F	C	F	F	F	F
Westbound Approach	F	C	F	F	F	F	F	D	F	F	F	F
Pine Street & Locust Street												
Westbound Approach	F	C	F	F	F	F	F	C	F	F	F	F
Pine Street & Birchcliff Parkway												
Westbound Approach	F	B	C	C	C	C	F	C	C	D	C	C
Pine Street & Sears Lane												
Eastbound Approach	E	C	D	D	C	C	F	C	C	D	C	C

(1) AWSC = All-Way Stop Control
(2) TWSC = Two-Way Stop Control (i.e., Side Street Stop)
(3) This intersection is signalized in this alternative

Notes:
1- this intersection does not exist in this alternative

Null Alternative

The Null Alternative scenario would provide the best traffic operating conditions for this area. The C-1 Section and C-2 Section would remove traffic from Home Avenue and Flynn Avenue while reducing volumes along U.S. Route 7 and the southern section of Pine Street. The C-8 Section would divert most of the through traffic away from Pine Street and improve operations throughout the entire Pine Street corridor. The four-lane highway would also provide enough capacity to provide acceptable intersection operations. This alternative is also very effective in providing connectivity to existing industrial facilities. However, the C-8 Section of this alternative requires new roadway construction within the environmentally-sensitive Superfund Site. As a result of the substantial environmental issues and associated remediation costs, the Null Alternative is not progressed as the Preferred Alternative.

Build Alternative 1 (See Also – Chapter 4)

By diverting traffic onto the Southern Connector/Champlain Parkway, Build Alternative 1 provides the same benefits for the southern section of Pine Street as the Null Alternative. Likewise, in the northern section of Pine Street, the connection for the north/south circulation to the CCD area needed to improve traffic operations is provided by the construction of the Battery Street Extension portion of the C-6 Section. The intersection of Pine Street and Maple Street is no longer a congestion point that would affect the entire CCD area. This alternative also provides connectivity to existing industrial facilities. However, without the C-8 Section, traffic volumes on Pine Street would increase between Lakeside Avenue and the Battery Street Extension. This would increase delays for the stop-controlled approaches trying to access Pine Street.

By removing through traffic from the neighborhood streets in the southern and northern sections of Pine Street, and providing acceptable LOS for the signalized intersections within the project study area, Build Alternative 1 meets the purpose and need of this project. However, the C-6 Section of this alternative requires new roadway construction through the existing Burlington rail yard facilities. As a result of substantial environmental and rail yard operation mitigation issues associated with the relocation of these operations, this alternative is not recommended as the Preferred Alternative at this time.

Build Alternative 1 (four-lane)

Build Alternative 1 (four-lane) satisfies the purpose and need of this project by providing mobility and access to the CCD. This alternative is also very effective in diverting through traffic away from the residential neighborhoods and providing connectivity to existing industrial facilities. The construction of this alternative has

the similar issues related to impacts to the existing rail yard as noted for the Build Alternative 1 because it requires new roadway construction through the existing Burlington rail yard facilities. In addition, substantial right-of-way impacts along Pine Street are also associated with this alternative to provide the four-lane section. As a result of substantial environmental and rail yard operation mitigation issues associated with the relocation of these operations and the substantial right-of-way impact, this alternative is not recommended as the Preferred Alternative.

C-1 Section and C-2 Section Only

The C-1 Section and C-2 Section Only alternative does reduce the through volume on the southern sections of Pine Street, and avoids the construction of a C-8 or C-6 Section, but does not provide acceptable operation conditions in the northern section of Pine Street. This is most notable at the AWSC intersections of Pine Street at Maple Street and Pine Street at King Street, where the LOS F conditions identified to occur in the No-Build Alternative would be exacerbated as a result of the increased traffic volumes northbound in this alternative. These operating conditions represent a substantial corridor capacity constraint, which would result in recurrent system-wide failure. Without addressing the lack of capacity and poor circulation in the CCD area further exacerbated by the additional traffic volume, the C-1 Section and C-2 Section Only alternative does not meet the purpose and need of the project and is not recommended as the Preferred Alternative.

Build Alternative 2 (See also Chapter 4)

Build Alternative 2 reduces the through volume on the southern sections of Pine Street, avoids the negative implications with the construction of the C-8 or C-6 Section, and with the installation of traffic signals at the intersections of Pine Street at Maple Street and Pine Street at King Street, provides acceptable operation conditions in the CCD area and mitigates the affect of traffic increases to the extent practicable. Build Alternative 2 addresses the overall mobility objectives of the project and provides improved access to the industrial facilities within the corridor when compared to the No-Build Alternative.

Build Alternative 2 would not only improve conditions within the Primary study area, but also improve conditions for the Secondary study area as well. Traffic volumes on U.S. Route 7 would decrease and signalized operations would improve as the Southern Connector/Champlain Parkway creates a more favorable route to access the CCD area. U.S. Route 7 through traffic currently using Home Avenue and Flynn Avenue to access Pine Street would also decrease. By removing through traffic from the neighborhood streets and providing acceptable LOS for the signalized intersections within the project study area, the Build Alternative 2 satisfies the purpose and need of this project. This alternative is recommended as the Preferred Alternative at this time.

APPENDIX 3B: TRANSPORTATION MODELING METHODOLOGY DOCUMENTATION

RSG INC.
RESOURCE SYSTEMS GROUP, INC.

Documentation for:

Southern Connector/Champlain Parkway Project

Draft

Prepared for:

February 2006

55 Railroad Row, White River Junction, Vermont 05001
TEL 802.295.4999 ▪ FAX 802.295.1006 ▪ www.rsginc.com

INTRODUCTION

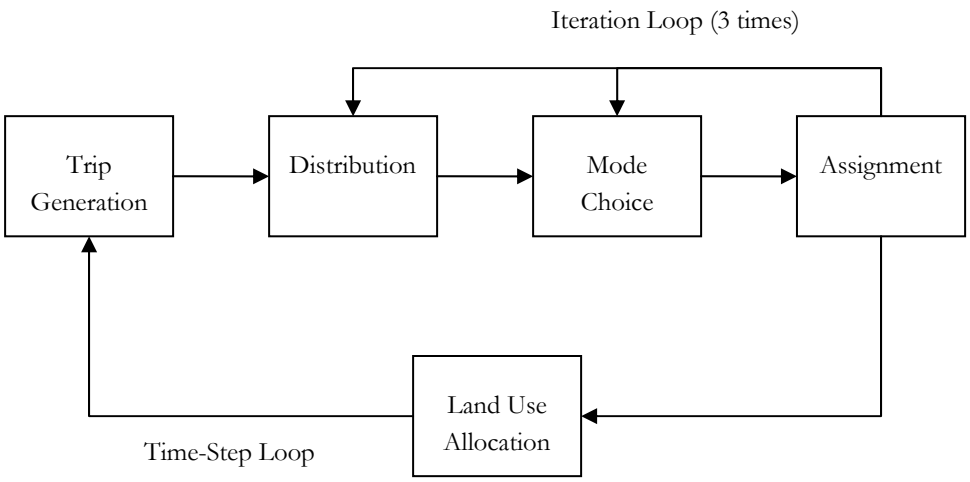
The purpose of this document is to provide a summary of the transportation modeling methodology and resulting traffic projections developed by Resource Systems Group (RSG) in support of the Southern Connector/Champlain Parkway project. RSG conducted model runs and performed post-model refinements for the scenarios and years described below.

TRANSPORTATION MODEL OVERVIEW

The tool used for this project was the Chittenden County Transportation Model, calibrated to the base year 1998. The model was developed for the Chittenden County Metropolitan Planning Organization (CCMPO) for performing comprehensive regional transportation analysis using the ITM/TModel software. The model includes 350 internal Traffic Analysis Zones (TAZs) covering all of Chittenden County, 17 external zones representing the surrounding areas, 1200 intersections (nodes), and 1600 road segments (links). The model is based on the four-step process: trip generation, trip distribution, mode choice, and traffic assignment and forecasts both the AM and PM peak hour periods. A fifth step, land use allocation, was also added by RSG. For a full technical description of the CCMPO model, see the "Report on Model Performance, Data Sources, and Parameter Estimation" which is available from the CCMPO.

The model structure is depicted in Figure 1 below.

Figure 1: Feedback in the Model Structure



An overview of the five steps in the CCMPO model is provided below:

- Trip Generation: estimates the number of person "trip ends" that start and end in each TAZ based on trip rates and land use (housing and employment).
- Trip Distribution: pairs the trip ends from trip generation for each trip type (work trips, home trips, etc.) using a gravity model construct. The results are zone-to-zone person-trip matrices by trip type.
- Mode Choice: breaks the person trip tables into travel modes (drive, shared ride, bus, walk/bike).
- Assignment: assigns the auto trip table to the roadway network. Two of the important results of this step are travel times and auto volumes.
- Land Use Allocation: allocates a user defined increment of growth (houses, retail employees, non-retail employees) to the internal TAZs. The result is future year land use (housing and employment) which are used by trip generation in the forecasting process. The land use allocation model uses a typical Lowry/Putnam construct and is sensitive to physical constraints (steep slopes, wetlands), political constraints (zoning), availability of land, and accessibility (travel times take from the four-step model). The purpose of the land use allocation module is to create future land use scenarios that are realistic, internally consistent, and that can be easily updated. These future transportation/land use scenarios are also realistically influenced by transportation measures including transit improvements and land use policy decisions.

Transportation models are deemed ready for forecasting when they are "calibrated" which means they reasonably replicate the base year conditions. The Federal Highway Administration (FHWA) has guidelines for calibration.[1] The CCMPO model used for this study exceeds each of the FHWA guidelines.

PROJECT-SPECIFIC USE OF THE MODEL

In order to be consistent with previous model analyses performed for this project, the model was run for the years 2002 (base year), 2012 (interim year), and 2022 (forecast year). The years of analysis were 2003 (using the 2002 model volumes), 2008 (using the 2012 model volumes), and 2028 (extrapolating the 2022 model volumes using the trend from 2012 to 2022). Using this approach we were able to represent the important model dynamics present in the future years (such as rerouting due to delay) while maintaining model consistency with previous work. This was important for "quality assurance" and "quality control" purposes.

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[1]Ismart, Dane. Calibration and Adjustment of System Planning Models. U.S. Department of Transportation, Federal Highway Administration Publication FHWA-ED-90-015. Washington, DC, December 1990.

Table 1 shows a list of the study intersections which include most of the major intersection in downtown Burlington, along U.S. Route 7 and Pine Street.

Table 1. Intersections Reported for the Southern Connector/Champlain Parkway Study

Number	Intersection Name
1	Main Street and South Willard Street
2	Main Street and South Union Street
3	Main Street and South Winooski Avenue
4	Main Street and St. Paul Street
5	Main Street and Pine Street
6	Main Street and Battery Street
7	Battery Street and King Street
8	Battery Street and Maple Street
9	Pine Street and King Street
10	Pine Street and Maple Street
11	Pine Street and Howard Street
12	Pine Street and Locust Street
13	Pine Street and Lakeside Avenue
14	Pine Street and Birchcliff Parkway
15	Pine Street and Sears Lane
16	Pine Street and Flynn Avenue
17	Pine Street and Home Avenue
18	Maple Street and St. Paul Street
19	St. Paul Street and South Union Street and Marian
20	St. Paul Street and South Winooski Avenue and Howard Street
21	U.S. Route 7 and St. Paul Street and Locust Street and South Willard Street
22	U.S. Route 7 and Birchcliff Parkway
23	U.S. Route 7 and Flynn Avenue
24	U.S. Route 7 and Home Avenue
25	U.S. Route 7 and I-189 Ramp C (westbound)
26	Home Avenue and Industrial Parkway and Austin Drive
27	Southern Connector and Home Avenue
28	Southern Connector and Pine Street
29	Southern Connector and Lakeside Avenue
30	Southern Connector and Sears Lane
31	Southern Connector and Flynn Avenue

These intersections are also referenced in Figure 2.

PROJECT ALTERNATIVES

The model was used to analyze six different alternatives in both the AM and PM peak periods. Within some alternatives there were also some modifications performed. The alternatives are described further below.

1. No Build Alternative

The "No Build" networks for 2012 and 2022 assumed the major roadway improvements identified in the CCMPO long range plan. These include:

- Circumferential Highway
- Kennedy Drive Widening
- Shelburne Road Widening
- Mary Street Extension to Market Street in South Burlington

All of these roadway improvements were assumed to be part of all other alternatives as well. The No-Build Alternative does not include the Southern Connector/Champlain Parkway.

2. TDM/TSM Alternative

A Transportation Demand Management (TDM) / Transportation Systems Management (TSM) alternative was performed using the model. The impacts were assumed to take place within a geographic area bounded by Pearl Street to the north, South Willard Street and U.S. Route 7 to the east, the intersection of I-189 and U.S. Route 7 and the Southern Connecter / Champlain Parkway to the south and Lake Champlain to the west. The improvements fall into three major headings listed below.

- Bus service was assumed to be provided throughout the entire geographic area described above. Where bus service was already present, the frequency of the service was assumed to double.
- The Champlain Flyer Commuter Rail service was assumed to be operational (this obviously has impacts beyond the geographic area described above).
- A 10% increase in participation in rideshare programs was assumed for work related trips. This was implemented by reducing home-to-work and work-to-home trips by 10% in all the TAZs of the program area. As a point of reference, the Year 2000 Journey to Work census data for Chittenden County reports a 10% carpool share and a 1.5% public transit share.

Note that while the bus and rail options use the model to estimate the impact (use of transit vs. auto), the TDM ride share program is assumed to result in a 10% reduction in auto trip making. So, rather than

develop a detailed TDM strategy designed to reduce trip making, we assumed a reduction in trips to simulate the outcome of an aggressive strategy that might include things like carpooling, vanpooling, and employer endorsed off peak shifts.

3. The Null Alternative (C-1 Section, C-2 Section and C-8 Section)

This alternative includes the Southern Connector/Champlain Parkway configuration from Home Avenue to the intersection of Battery Street and Maple Street. The Southern Connector is assumed to be a four-lane road in this alternative.

4. The Build 1 Alternative (C-1 Section, C-2 Section and C-6 Section)

This alternative includes the Southern Connector/Champlain Parkway configuration from Home Avenue to Lakeside Avenue (C-1 Section and C-2 Section), and from the intersection of the Southern Connector/Champlain Parkway and Lakeside Avenue to the intersection of Battery Street and Maple Street (C-6 Section). This alternative was run in two different configurations:

- Two-lane Sections (one lane in each direction)
- Four-lane Sections (two lanes in each direction)

5. The Build 2 Alternative (C-1 Section / C-2 Section)

This alternative includes the Southern Connector/Champlain Parkway configuration from Home Avenue to Lakeside Avenue (C-1 Section and C-2 Section). The Southern Connector/Champlain Parkway is assumed to be a two-lane configuration for this alternative (one lane in each direction).

6. The Build 2 Alternative with geometric improvements on Pine Street

This alternative is the same as the Build 2 alternative described above but with improvements to Pine Street. Pine Street is widened from two lanes to three lanes (a shared left-turn lane) from Maple Street to Main Street. Intersection changes from an all-way stop conditions to a signalized controls were also assumed at Pine Street / Maple Street intersection and the Pine Street / King Street intersection.

N

INDUS TRIAL PKWY.

AUSTIN DR.

BATTERY ST.

PINE ST.

PINE ST.

MAPLE ST.

KING ST.

MAIN ST.

HOME AVE.

FLYNN AVE.

SEARS LN.

BIRCHCLIFF PKWY.

LAKESIDE AVE.

LOCUST ST.

HOWARD ST.

SAINT PAUL ST.

SOUTH WINOOSKI AVE.

SHELBURNE ST.
(U.S. ROUTE 7)

SOUTH UNION ST.

SOUTH WILLARD ST.

I-189 RAMP C

CLYMER

LEDGE RD.

I-189

26 17 16 15 14 13 12 11 8 7 6 10 9 5 18 4 20 3 25 24 23 22 21 19 2 1

NOT TO SCALE

FILE NAME = u:\8659\rpts\fseis\displays\traffic\traffic2004\los\fig03a.dgn
DATE/TIME = 8/29/2006
USER = SYP

Southern Connector/Champlain Parkway MEGC-M5000(1)

CLOUGH HARBOUR & ASSOCIATES LLP
III Winners Circle, PO Box 5269, Albany, NY 12205
www.cloughharbour.com

FIGURE 2

RESOURCE SYSTEMS GROUP'S
TRAFFIC MODEL STUDY INTERSECTIONS

POST MODEL REFINEMENTS

While transportation models adequately forecast the most likely significant future trends, it is common to perform post-model refinements at the intersection level prior to performing level-of-service analysis. These refinements can be broken into two categories.

- Ground truth refinements using observed counts
- Refinements where model detail does not adequately capture subtle roadway conditions

Both of these refinement techniques are described below. In all cases, the descriptive trends and model results were maintained.

Ground Truth Refinements

While the model is calibrated to base conditions, it is also appropriate to use intersection counts to enhance the model accuracy at the turning movement level. Generally, this exercise involves comparing the intersection counts to base model volumes (the same year represented by the counts) and then applying that to the future model run. Essentially, the model is used to forecast the change that will occur between the base and future years and that change is applied to the counts. This process is called "pivoting."

There are two methods used to pivot future volumes, "absolute difference" and "percentage difference". In the absolute differences method the difference between count and model values are added to the future volumes. Percentage differences method multiplies the ratio of the counts and model volumes to the future volumes. The absolute pivoting method was used where the resulting volumes were positive. Where absolute pivoting resulted in negative numbers, the percentage pivoting method was used. After pivoting, the network was balanced to show a conserved flow of traffic between intersections.

Refinements to Intersection Sensitivity

Transportation models are inherently simplified representations of actual conditions. They do not represent every small driveway and, in some cases, do not distinguish between virtually identical route choices. While these limitations are relatively minor, there is an approach to account for them which further improve the model results. The primary method is to use observed route choices and know travel times to ensure that the model appropriately assigns volumes where the model is known to have difficulty in distinguishing route choices.

IMPORTANT MODEL DYNAMICS

This section serves to describe some of the major trends in traffic flow that the model is predicting for the future year. The CCMPO Transportation model is a complex forecasting tool that encompasses many

dynamics such as mode choices. These observations are limited to the auto routing impacts associated with the Southern Connector/Champlain Parkway project.

Comparing No Build to the Build 2 Alternative (C-1 Section and C-2 Section)

The construction of C-1 Section and C-2 Section has several important impacts including the following:

- The trips associated with land uses west of Pine Street (especially those west of the C-1Section and C-2 Section) use these new sections in place of Pine Street. This alleviates some level of congestion on Pine Street and provides faster access to and from these land uses.
- There is also a shift from Pine Street to the new C-1Section and C-2 Section by travelers who were using Pine Street as a through road. This shift creates a secondary shift from U.S. Route 7 to both Pine Street and to the new C-1 Section and C-2 Section. These shifts occur primarily south of Lakeside Avenue where the C-2 Section ties back into Pine Street
- Some of the traffic shifted from U.S. Route 7 stays on Pine Street north of Lakeside Avenue which results in an increase on Pine Street and a decrease on U.S. Route 7
- Finally, there is a small shift from Main Street to north/south corridor as a result of the increase in capacity.

Comparing No Build to the Build 1 Alternative (C-1 Section, C-2 Section and C-6 Section)

The construction of Section C-6 in addition to the C-1 Section and C-2 Section causes some additional dynamics including the following:

- There is a local shift of trips from Pine Street to the C-6 Section which provides a better connection to Battery Street.
- There is shift in traffic from U.S. Route 7 to Pine Street and on to the C-6 Section similarly because of the improved access to Battery Street.
- Finally, there is a slight increase in use of the corridor due to the increase in capacity. These shifts occur from Main Street and South Winooski Avenue and are more prominent in the AM peak hour.

These dynamics are largely independent of the C-1 Section and C-2 Section. That is, we would expect these dynamics to occur with or without the construction of the C-1 Section and C-2 Section.

APPENDIX 3C: TRAFFIC CAPACITY ANALYSES

EXISTING CONDITIONS

2003 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1832	1583		1817	1583		3500		1770	1855	
Flt Permitted		0.86	1.00		0.82	1.00		0.85		0.95	1.00	
Satd. Flow (perm)		1607	1583		1520	1583		3000		1770	1855	
Volume (vph)	15	30	25	60	60	200	35	315	15	265	570	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	33	28	67	67	222	39	350	17	294	633	17
RTOR Reduction (vph)	0	0	23	0	0	123	0	0	0	0	0	0
Lane Group Flow (vph)	0	50	5	0	134	99	0	406	0	294	650	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		8.1	8.1		8.1	23.0		13.5		14.9	33.4	
Effective Green, g (s)		9.1	9.1		9.1	25.0		14.5		15.9	34.4	
Actuated g/C Ratio		0.16	0.16		0.16	0.44		0.26		0.28	0.61	
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)		260	256		246	703		773		500	1133	
v/s Ratio Prot			0.00			0.06				0.17	c0.35	
v/s Ratio Perm		0.03			c0.09			0.14				
v/c Ratio		0.19	0.02		0.54	0.14		0.53		0.59	0.57	
Uniform Delay, d1		20.4	19.8		21.7	9.3		17.9		17.4	6.6	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		2.5	0.1		0.6		1.8	0.7	
Delay (s)		20.8	19.9		24.2	9.4		18.6		19.2	7.3	
Level of Service		C	B		C	A		B		B	A	
Approach Delay (s)		20.5			14.9			18.6			11.0	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.93			0.88			1.00			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1723			1637			1854			1826	
Flt Permitted	0.67	1.00			0.99			0.97			0.84	
Satd. Flow (perm)	1242	1723			1630			1806			1544	
Volume (vph)	15	5	5	5	10	115	10	235	5	170	450	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	6	6	6	11	128	11	261	6	189	500	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	17	12	0	0	145	0	0	278	0	0	728	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.8	22.8			22.8			36.9			36.9	
Effective Green, g (s)	23.8	23.8			23.8			37.9			37.9	
Actuated g/C Ratio	0.34	0.34			0.34			0.54			0.54	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	424	588			557			982			840	
v/s Ratio Prot		0.01										
v/s Ratio Perm	0.01				c0.09			0.15			c0.47	
v/c Ratio	0.04	0.02			0.26			0.28			0.87	
Uniform Delay, d1	15.3	15.2			16.6			8.6			13.7	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1			1.1			0.2			9.4	
Delay (s)	15.5	15.3			17.7			8.7			23.1	
Level of Service	B	B			B			A			C	
Approach Delay (s)		15.4			17.7			8.7			23.1	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

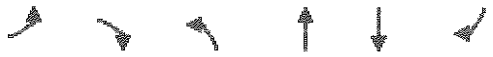
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.90			0.94			0.99	
Flt Protected		0.99			0.99			0.99			0.96	
Satd. Flow (prot)		1732			1610			1663			1712	
Flt Permitted		0.94			0.96			0.92			0.73	
Satd. Flow (perm)		1639			1557			1548			1314	
Volume (vph)	5	15	5	45	40	240	5	5	10	405	30	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	17	6	50	44	267	6	6	11	450	33	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	29	0	0	361	0	0	23	0	0	511	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		20.9			20.9			29.5			28.5	
Effective Green, g (s)		20.9			20.9			29.5			29.5	
Actuated g/C Ratio		0.36			0.36			0.51			0.51	
Clearance Time (s)		4.0			4.0			4.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		587			557			782			664	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.23			0.01			c0.39	
v/c Ratio		0.05			0.65			0.03			0.77	
Uniform Delay, d1		12.3			15.7			7.3			11.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			5.7			0.0			5.4	
Delay (s)		12.4			21.4			7.3			17.1	
Level of Service		B			C			A			B	
Approach Delay (s)		12.4			21.4			7.3			17.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↰	↱		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.97			1.00	0.85		1.00	0.85		0.97	
Flt Protected		0.99			1.00	1.00		0.98	1.00		0.99	
Satd. Flow (prot)		1798			1861	1583		1835	1583		1796	
Flt Permitted		0.92			0.99	1.00		0.84	1.00		0.88	
Satd. Flow (perm)		1667			1851	1583		1557	1583		1606	
Volume (vph)	45	235	75	5	330	50	55	125	15	45	125	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	261	83	6	367	56	61	139	17	50	139	44
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	13	0	0	0
Lane Group Flow (vph)	0	394	0	0	373	27	0	200	4	0	233	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		20.5			20.5	20.5		10.0	10.0		10.0	
Effective Green, g (s)		21.5			21.5	21.5		11.0	11.0		11.0	
Actuated g/C Ratio		0.47			0.47	0.47		0.24	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)		791			879	751		378	384		390	
v/s Ratio Prot												
v/s Ratio Perm		c0.24			0.20	0.02		0.13	0.00		c0.15	
v/c Ratio		0.50			0.42	0.04		0.53	0.01		0.60	
Uniform Delay, d1		8.2			7.8	6.4		14.9	13.0		15.2	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.5			0.3	0.0		1.3	0.0		2.5	
Delay (s)		8.7			8.2	6.4		16.2	13.0		17.6	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		8.7			7.9			16.0			17.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.38	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	679	1863	1801	1583
Volume (vph)	55	60	120	520	555	110
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	67	133	578	617	122
RTOR Reduction (vph)	0	56	0	0	0	34
Lane Group Flow (vph)	61	11	133	578	617	88
Turn Type		Prot	Perm			Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	11.4	11.4	52.1	52.1	52.1	52.1
Effective Green, g (s)	12.4	12.4	53.1	53.1	53.1	53.1
Actuated g/C Ratio	0.17	0.17	0.72	0.72	0.72	0.72
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)	289	267	491	1346	1301	1144
v/s Ratio Prot	c0.04	0.01		0.31	c0.34	
v/s Ratio Perm			0.20			0.06
v/c Ratio	0.21	0.04	0.27	0.43	0.47	0.08
Uniform Delay, d1	26.3	25.6	3.5	4.1	4.3	3.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	1.4	1.0	1.2	0.1
Delay (s)	26.7	25.6	4.9	5.1	5.5	3.1
Level of Service	C	C	A	A	A	A
Approach Delay (s)	26.1			5.1	5.1	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	73.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.99			0.91			1.00		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1931			1809			1980		1711	1765	
Flt Permitted		0.58			0.99			0.99		0.28	1.00	
Satd. Flow (perm)		1138			1791			1959		506	1765	
Volume (vph)	55	60	5	10	90	185	10	480	10	110	400	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	67	6	11	100	206	11	533	11	122	444	67
RTOR Reduction (vph)	0	2	0	0	96	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	132	0	0	221	0	0	554	0	122	506	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.5			12.5			23.0		34.1	34.1	
Effective Green, g (s)		13.5			13.5			24.0		35.1	35.1	
Actuated g/C Ratio		0.23			0.23			0.40		0.59	0.59	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		259			407			792		443	1043	
v/s Ratio Prot										0.03	c0.29	
v/s Ratio Perm		0.12			c0.12			c0.28		0.13		
v/c Ratio		0.51			0.54			0.70		0.28	0.48	
Uniform Delay, d1		20.1			20.2			14.7		7.6	7.0	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.6			1.5			2.8		0.3	0.4	
Delay (s)		21.6			21.7			17.5		7.9	7.3	
Level of Service		C			C			B		A	A	
Approach Delay (s)		21.6			21.7			17.5			7.4	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	90	70	25	105	15	45	170	35	15	185	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	100	78	28	117	17	50	189	39	17	206	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	189	161	278	228
Volume Left (vph)	11	28	50	17
Volume Right (vph)	78	17	39	6
Hadj (s)	-0.20	0.01	-0.01	0.03
Departure Headway (s)	5.4	5.6	5.2	5.4
Degree Utilization, x	0.28	0.25	0.40	0.34
Capacity (veh/h)	606	574	635	621
Control Delay (s)	10.4	10.5	11.8	11.1
Approach Delay (s)	10.4	10.5	11.8	11.1
Approach LOS	B	B	B	B

Intersection Summary			
Delay	11.1		
HCM Level of Service	B		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	65	315	55	170	15	160	230	45	15	260	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	72	350	61	189	17	178	256	50	17	289	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	428	267	483	311
Volume Left (vph)	6	61	178	17
Volume Right (vph)	350	17	50	6
Hadj (s)	-0.45	0.04	0.05	0.03
Departure Headway (s)	7.6	8.7	8.1	8.5
Degree Utilization, x	0.90	0.64	1.08	0.73
Capacity (veh/h)	428	386	445	406
Control Delay (s)	48.9	26.1	94.7	31.2
Approach Delay (s)	48.9	26.1	94.7	31.2
Approach LOS	E	D	F	D

Intersection Summary			
Delay	56.0		
HCM Level of Service	F		
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	130	10	20	115	225	10	150	15	145	235	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	144	11	22	128	250	11	167	17	161	261	39

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	211	400	194	461
Volume Left (vph)	56	22	11	161
Volume Right (vph)	11	250	17	39
Hadj (s)	0.06	-0.33	-0.01	0.05
Departure Headway (s)	7.3	6.5	7.3	6.6
Degree Utilization, x	0.43	0.72	0.39	0.85
Capacity (veh/h)	436	522	438	522
Control Delay (s)	15.8	24.1	14.9	35.8
Approach Delay (s)	15.8	24.1	14.9	35.8
Approach LOS	C	C	B	E

Intersection Summary			
Delay	25.6		
HCM Level of Service	D		
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	15	20	5	40	20	540	20	30	645	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	17	22	6	44	22	600	22	33	717	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1489	1453	719	1461	1444	611	722			622		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1489	1453	719	1461	1444	611	722			622		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	95	96	77	96	91	97			97		
cM capacity (veh/h)	86	123	428	95	124	494	880			959		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	72	644	756
Volume Left	6	22	22	33
Volume Right	17	44	22	6
cSH	186	195	880	959
Volume to Capacity	0.15	0.37	0.03	0.03
Queue Length 95th (ft)	13	40	2	3
Control Delay (s)	27.7	33.8	0.7	0.9
Lane LOS	D	D	A	A
Approach Delay (s)	27.7	33.8	0.7	0.9
Approach LOS	D	D		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	60	55	510	65	45	605
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	61	567	72	50	672
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			600			
pX, platoon unblocked	0.87	0.87			0.87	
vC, conflicting volume	1375	603			639	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1430	544			586	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	45	87			94	
cM capacity (veh/h)	122	470			862	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	128	639	722
Volume Left	67	0	50
Volume Right	61	72	0
cSH	189	1700	862
Volume to Capacity	0.68	0.38	0.06
Queue Length 95th (ft)	102	0	5
Control Delay (s)	56.8	0.0	1.5
Lane LOS	F		A
Approach Delay (s)	56.8	0.0	1.5
Approach LOS	F		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	15	65	595	25	30	565
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	72	661	28	33	628
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.86					
vC, conflicting volume	1369	675			689	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1428	675			689	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	84			96	
cM capacity (veh/h)	124	454			905	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	89	689	661
Volume Left	17	0	33
Volume Right	72	28	0
cSH	303	1700	905
Volume to Capacity	0.29	0.41	0.04
Queue Length 95th (ft)	30	0	3
Control Delay (s)	21.8	0.0	1.0
Lane LOS	C		A
Approach Delay (s)	21.8	0.0	1.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	20	155	625	555	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	22	172	694	617	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.82	0.92	0.92			
vC, conflicting volume	1669	631	644			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1667	597	612			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	95	81			
cM capacity (veh/h)	70	461	887			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	28	867	644
Volume Left	6	172	0
Volume Right	22	0	28
cSH	218	887	1700
Volume to Capacity	0.13	0.19	0.38
Queue Length 95th (ft)	11	18	0
Control Delay (s)	24.0	4.6	0.0
Lane LOS	C	A	
Approach Delay (s)	24.0	4.6	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.97			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1839		1770	1789			1923			1743	
Flt Permitted	0.21	1.00		0.39	1.00			0.95			0.92	
Satd. Flow (perm)	374	1839		718	1789			1842			1618	
Volume (vph)	25	370	35	80	560	25	25	175	50	45	185	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	411	39	89	622	28	28	194	56	50	206	56
RTOR Reduction (vph)	0	4	0	0	2	0	0	8	0	0	8	0
Lane Group Flow (vph)	28	446	0	89	648	0	0	270	0	0	304	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.9	24.9		24.9	24.9			16.5			16.5	
Effective Green, g (s)	25.9	25.9		25.9	25.9			17.5			17.5	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.31			0.31	
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)	173	851		332	827			576			506	
v/s Ratio Prot		0.24			c0.36							
v/s Ratio Perm	0.07			0.12				0.15			c0.19	
v/c Ratio	0.16	0.52		0.27	0.78			0.47			0.60	
Uniform Delay, d1	8.7	10.7		9.2	12.7			15.5			16.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.4	0.6		0.4	4.9			0.6			2.0	
Delay (s)	9.2	11.3		9.7	17.6			16.1			18.3	
Level of Service	A	B		A	B			B			B	
Approach Delay (s)		11.1			16.6			16.1			18.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.95				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1875		1652	1716				
Flt Permitted	0.23	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	459	1739			1875		1652	1716				
Volume (vph)	15	350	0	0	570	60	85	175	80	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	389	0	0	633	67	94	194	89	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	16	0	0	0	0
Lane Group Flow (vph)	17	389	0	0	695	0	94	267	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	27.1	27.1			27.1		13.5	13.5				
Effective Green, g (s)	28.1	28.1			28.1		14.5	14.5				
Actuated g/C Ratio	0.53	0.53			0.53		0.27	0.27				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	243	922			994		452	469				
v/s Ratio Prot		0.22			c0.37			c0.16				
v/s Ratio Perm	0.04						0.06					
v/c Ratio	0.07	0.42			0.70		0.21	0.57				
Uniform Delay, d1	6.1	7.5			9.3		14.8	16.6				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.3			2.2		0.2	1.6				
Delay (s)	6.2	7.8			11.5		15.1	18.2				
Level of Service	A	A			B		B	B				
Approach Delay (s)		7.8			11.5			17.4			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1657		1711	1801	1531		1609		1652	1739	1583
Flt Permitted	0.40	1.00		0.54	1.00	1.00		0.91		0.72	1.00	1.00
Satd. Flow (perm)	656	1657		964	1801	1531		1488		1259	1739	1583
Volume (vph)	30	240	20	55	385	130	10	25	10	65	160	80
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	267	22	61	428	144	11	28	11	72	178	89
RTOR Reduction (vph)	0	3	0	0	0	74	0	9	0	0	0	62
Lane Group Flow (vph)	33	286	0	61	428	70	0	41	0	72	178	27
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	28.8	28.8		29.9	29.9	29.9		10.6		18.6	18.6	18.6
Effective Green, g (s)	29.8	29.8		30.9	30.9	30.9		11.6		19.6	19.6	19.6
Actuated g/C Ratio	0.47	0.47		0.48	0.48	0.48		0.18		0.31	0.31	0.31
Clearance Time (s)	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
Lane Grp Cap (vph)	306	773		466	871	740		270		411	533	486
v/s Ratio Prot		0.17			c0.24					0.01	c0.10	
v/s Ratio Perm	0.05			0.06		0.05		0.03		0.04		0.02
v/c Ratio	0.11	0.37		0.13	0.49	0.09		0.15		0.18	0.33	0.06
Uniform Delay, d1	9.6	11.0		9.1	11.2	8.9		22.0		16.3	17.1	15.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.1	0.4	0.1		0.3		0.2	0.4	0.0
Delay (s)	9.7	11.3		9.2	11.6	9.0		22.3		16.5	17.5	15.7
Level of Service	A	B		A	B	A		C		B	B	B
Approach Delay (s)		11.1			10.8			22.3			16.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)		1737	1478	1486	1525			1835	1794	1593	1836	
Flt Permitted		0.99	1.00	0.57	1.00			0.89	1.00	0.59	1.00	
Satd. Flow (perm)		1720	1478	890	1525			1662	1794	990	1836	
Volume (vph)	5	240	45	30	345	70	60	140	30	20	50	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	267	50	33	383	78	67	156	33	22	56	6
RTOR Reduction (vph)	0	0	24	0	9	0	0	0	16	0	4	0
Lane Group Flow (vph)	0	273	26	33	452	0	0	223	17	22	58	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		18.7	18.7	18.7	18.7			12.6	12.6	12.6	12.6	
Effective Green, g (s)		19.7	19.7	19.7	19.7			13.6	13.6	13.6	13.6	
Actuated g/C Ratio		0.43	0.43	0.43	0.43			0.29	0.29	0.29	0.29	
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)		732	629	379	649			488	527	291	539	
v/s Ratio Prot					c0.30						0.03	
v/s Ratio Perm		0.16	0.02	0.04				c0.13	0.01	0.02		
v/c Ratio		0.37	0.04	0.09	0.70			0.46	0.03	0.08	0.11	
Uniform Delay, d1		9.1	7.8	7.9	10.9			13.3	11.7	11.8	11.9	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.0	0.1	3.3			0.7	0.0	0.1	0.1	
Delay (s)		9.4	7.8	8.0	14.1			14.0	11.7	11.9	12.0	
Level of Service		A	A	A	B			B	B	B	B	
Approach Delay (s)		9.2			13.7			13.7			12.0	
Approach LOS		A			B			B			B	

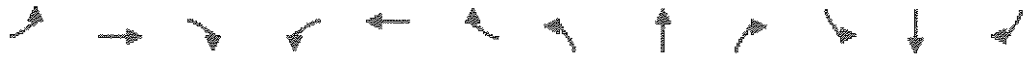
Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			0.98			1.00			1.00	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1777			1923			1856			2103	
Flt Permitted		0.96			0.96			0.98			0.99	
Satd. Flow (perm)		1717			1864			1825			2083	
Volume (vph)	10	30	15	5	20	5	20	470	5	5	245	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	33	17	6	22	6	22	522	6	6	272	6
RTOR Reduction (vph)	0	14	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	47	0	0	34	0	0	549	0	0	283	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		343			373			707			807	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.30			0.14	
v/c Ratio		0.14			0.09			0.78			0.35	
Uniform Delay, d1		26.3			26.1			21.5			17.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.8			0.5			8.2			1.2	
Delay (s)		27.2			26.6			29.7			18.6	
Level of Service		C			C			C			B	
Approach Delay (s)		27.2			26.6			29.7			18.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.98		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1872		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1872		
Volume (vph)	5	175	15	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	194	17	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	216	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	491		
v/s Ratio Prot	0.00	c0.12		
v/s Ratio Perm				
v/c Ratio	0.01	0.44		
Uniform Delay, d1	21.8	24.6		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	2.8		
Delay (s)	21.9	27.4		
Level of Service	C	C		
Approach Delay (s)		27.3		
Approach LOS		C		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791	1583		1808	1583	1770	3536		1770	3506	
Flt Permitted		0.75	1.00		0.81	1.00	0.24	1.00		0.25	1.00	
Satd. Flow (perm)		1398	1583		1507	1583	453	3536		467	3506	
Volume (vph)	60	15	130	15	10	15	205	1015	5	15	685	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	17	144	17	11	17	228	1128	6	17	761	50
RTOR Reduction (vph)	0	0	122	0	0	14	0	0	0	0	6	0
Lane Group Flow (vph)	0	84	22	0	28	3	228	1134	0	17	805	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		7.7	7.7		7.7	7.7	35.2	35.2		24.1	24.1	
Effective Green, g (s)		7.7	7.7		7.7	7.7	35.2	35.2		24.1	24.1	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.69	0.69		0.47	0.47	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		211	239		228	239	497	2445		221	1660	
v/s Ratio Prot							0.06	c0.32			0.23	
v/s Ratio Perm		c0.06	0.01		0.02	0.00	0.25			0.04		
v/c Ratio		0.40	0.09		0.12	0.01	0.46	0.46		0.08	0.48	
Uniform Delay, d1		19.5	18.6		18.7	18.4	3.8	3.6		7.3	9.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.2		0.2	0.0	0.7	0.1		0.1	0.2	
Delay (s)		20.7	18.8		18.9	18.4	4.5	3.7		7.5	9.4	
Level of Service		C	B		B	B	A	A		A	A	
Approach Delay (s)		19.5			18.7			3.8			9.3	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3297		1652	3269	
Flt Permitted		0.75	1.00	0.71	1.00		0.26	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		450	3297		1652	3269	
Volume (vph)	50	10	250	15	5	10	305	1290	15	10	745	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	278	17	6	11	339	1433	17	11	828	61
RTOR Reduction (vph)	0	0	247	0	10	0	0	1	0	0	6	0
Lane Group Flow (vph)	0	67	31	17	7	0	339	1449	0	11	883	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		618	2206		21	1366	
v/s Ratio Prot					0.00		0.14	c0.44		0.01	c0.27	
v/s Ratio Perm		c0.05	0.02	0.01			0.22					
v/c Ratio		0.45	0.19	0.11	0.03		0.55	0.66		0.52	0.65	
Uniform Delay, d1		29.1	28.3	28.0	27.8		11.1	6.9		34.4	16.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		3.5	1.5		10.4	2.4	
Delay (s)		29.9	28.5	28.2	27.8		14.5	8.4		44.8	18.6	
Level of Service		C	C	C	C		B	A		D	B	
Approach Delay (s)		28.8			28.0			9.6			19.0	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM Average Control Delay	14.7	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	59.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1692			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1692			3539			3539	
Volume (vph)	0	0	0	1175	50	0	0	915	0	0	1080	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1306	56	0	0	1017	0	0	1200	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	663	699	0	0	1017	0	0	1200	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.1	28.1			27.5			27.5	
Effective Green, g (s)				30.1	30.1			29.5			29.5	
Actuated g/C Ratio				0.45	0.45			0.44			0.44	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				748	753			1544			1544	
v/s Ratio Prot								0.29			c0.34	
v/s Ratio Perm				0.39	0.41							
v/c Ratio				0.89	0.93			0.66			0.78	
Uniform Delay, d1				17.2	17.7			15.1			16.2	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				12.2	17.5			1.0			2.5	
Delay (s)				29.4	35.2			16.1			18.8	
Level of Service				C	D			B			B	
Approach Delay (s)		0.0			32.4			16.1			18.8	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.4%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	80	45	20	135	15	105	340	35	5	150	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	89	50	22	150	17	117	378	39	6	167	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	189	533	183
Volume Left (vph)	6	22	117	6
Volume Right (vph)	50	17	39	11
Hadj (s)	-0.17	0.00	0.03	0.00
Departure Headway (s)	6.2	6.2	5.3	5.8
Degree Utilization, x	0.25	0.33	0.79	0.30
Capacity (veh/h)	519	523	658	547
Control Delay (s)	11.2	12.2	25.1	11.3
Approach Delay (s)	11.2	12.2	25.1	11.3
Approach LOS	B	B	D	B

Intersection Summary			
Delay	18.5		
HCM Level of Service	C		
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	65	5	545	235	5	495
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	6	606	261	6	550
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.93					
vC, conflicting volume	1297	736			867	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1318	736			867	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	55	99			99	
cM capacity (veh/h)	161	419			777	

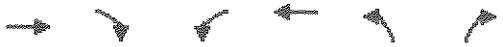
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	78	867	556
Volume Left	72	0	6
Volume Right	6	261	0
cSH	168	1700	777
Volume to Capacity	0.46	0.51	0.01
Queue Length 95th (ft)	54	0	1
Control Delay (s)	43.6	0.0	0.2
Lane LOS	E		A
Approach Delay (s)	43.6	0.0	0.2
Approach LOS	E		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	0	45	10	0	10	35	1040	5	5	715	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	0	50	11	0	11	39	1156	6	6	794	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1497	2069	422	1694	2092	581	844			1161		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1497	2069	422	1694	2092	581	844			1161		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	91	79	100	98	95			99		
cM capacity (veh/h)	79	50	580	53	49	457	788			597		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	61	22	617	583	403	447
Volume Left	11	11	39	0	6	0
Volume Right	50	11	0	6	0	50
cSH	269	94	788	1700	597	1700
Volume to Capacity	0.23	0.24	0.05	0.34	0.01	0.26
Queue Length 95th (ft)	21	21	4	0	1	0
Control Delay (s)	22.3	54.6	1.3	0.0	0.3	0.0
Lane LOS	C	F	A		A	
Approach Delay (s)	22.3	54.6	0.7		0.1	
Approach LOS	C	F				

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	165	25	90	60	10	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	183	28	100	67	11	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			211		464	197
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			211		464	197
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		98	95
cM capacity (veh/h)			1359		516	844

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	211	167	50
Volume Left	0	100	11
Volume Right	28	0	39
cSH	1700	1359	739
Volume to Capacity	0.12	0.07	0.07
Queue Length 95th (ft)	0	6	5
Control Delay (s)	0.0	5.0	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	5.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2003 EXISTING*
Analysis Time Period	*AM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *LOCUST/LEDGE*	North/South Street: *ROUTE 7*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*805*	*240*	*0*	*545*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*894*	*266*	*0*	*605*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*30*	*0*	*5*	*85*
Peak Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*33*	*0*	*5*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*0*			*33*			*99*
C (m) (vph)		*598*			*458*			*357*
v/c		*0.00*			*0.07*			*0.28*
95% queue length		*0.00*			*0.23*			*1.11*
Control Delay		*11.0*			*13.5*			*18.9*
LOS		*B*			*B*			*C*
Approach Delay	--	--	*13.5*			*18.9*		
Approach LOS	--	--	*B*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2003 EXISTING*
Analysis Time Period	*AM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *SOUTH WILLARD* | North/South Street: *ROUTE 7*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*55*	*750*	*0*	*0*	*560*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*61*	*833*	*0*	*0*	*622*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*145*	*0*	*0*	*0*	*0*
Peak Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*161*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

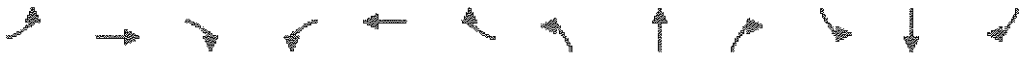
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*61*				*161*			
C (m) (vph)	*959*				*96*			
v/c	*0.06*				*1.68*			
95% queue length	*0.20*				*12.83*			
Control Delay	*9.0*				*421.8*			
LOS	*A*				*F*			
Approach Delay	--	--	*421.8*					
Approach LOS	--	--	*F*					

EXISTING CONDITIONS

2003 PM PEAK HOUR

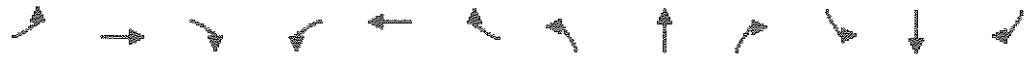
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1830	1583		1810	1583		3476		1770	1844	
Flt Permitted		0.85	1.00		0.77	1.00		0.86		0.95	1.00	
Satd. Flow (perm)		1589	1583		1443	1583		3010		1770	1844	
Volume (vph)	25	45	50	100	70	310	60	555	60	250	425	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	50	56	111	78	344	67	617	67	278	472	33
RTOR Reduction (vph)	0	0	44	0	0	149	0	0	0	0	0	0
Lane Group Flow (vph)	0	78	12	0	189	195	0	751	0	278	505	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		13.7	13.7		13.7	27.7		21.3		14.0	40.3	
Effective Green, g (s)		14.7	14.7		14.7	29.7		22.3		15.0	41.3	
Actuated g/C Ratio		0.21	0.21		0.21	0.43		0.32		0.22	0.60	
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)		340	338		308	683		976		386	1107	
v/s Ratio Prot			0.01			0.12				c0.16	0.27	
v/s Ratio Perm		0.05			c0.13			c0.25				
v/c Ratio		0.23	0.04		0.61	0.29		0.77		0.72	0.46	
Uniform Delay, d1		22.4	21.4		24.5	12.7		20.9		25.0	7.6	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		3.6	0.2		3.7		6.5	0.3	
Delay (s)		22.7	21.5		28.1	12.9		24.6		31.4	7.9	
Level of Service		C	C		C	B		C		C	A	
Approach Delay (s)		22.2			18.3			24.6			16.2	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	68.8	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.94			0.88			0.99			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1757			1629			1847			1828	
Flt Permitted	0.54	1.00			0.99			0.99			0.78	
Satd. Flow (perm)	1010	1757			1619			1824			1449	
Volume (vph)	35	25	15	10	10	210	10	430	25	125	415	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	28	17	11	11	233	11	478	28	139	461	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	39	45	0	0	255	0	0	517	0	0	639	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.9	22.9			22.9			32.5			32.5	
Effective Green, g (s)	23.9	23.9			23.9			33.5			33.5	
Actuated g/C Ratio	0.37	0.37			0.37			0.51			0.51	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	369	642			592			934			742	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.04				c0.16			0.28			c0.44	
v/c Ratio	0.11	0.07			0.43			0.55			0.86	
Uniform Delay, d1	13.7	13.5			15.6			10.9			13.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.6	0.2			2.3			0.7			10.1	
Delay (s)	14.3	13.7			17.9			11.6			24.0	
Level of Service	B	B			B			B			C	
Approach Delay (s)		14.0			17.9			11.6			24.0	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



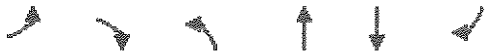
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.87			0.92			0.99	
Flt Protected		0.98			1.00			1.00			0.96	
Satd. Flow (prot)		1746			1571			1655			1711	
Flt Permitted		0.75			1.00			1.00			0.70	
Satd. Flow (perm)		1346			1568			1655			1259	
Volume (vph)	45	45	5	5	20	400	0	20	30	405	15	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	50	6	6	22	444	0	22	33	450	17	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	106	0	0	472	0	0	55	0	0	489	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		35.5			35.5			38.4			37.4	
Effective Green, g (s)		35.5			35.5			38.4			38.4	
Actuated g/C Ratio		0.43			0.43			0.47			0.47	
Clearance Time (s)		4.0			4.0			4.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		583			680			776			590	
v/s Ratio Prot								0.03				
v/s Ratio Perm		0.08			c0.30						c0.39	
v/c Ratio		0.18			0.69			0.07			0.83	
Uniform Delay, d1		14.3			18.8			11.9			18.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			5.8			0.0			9.4	
Delay (s)		15.0			24.6			12.0			28.3	
Level of Service		B			C			B			C	
Approach Delay (s)		15.0			24.6			12.0			28.3	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.3%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.97			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		0.98	1.00		0.98	
Satd. Flow (prot)		1810			1848	1583		1831	1583		1818	
Flt Permitted		0.99			0.89	1.00		0.83	1.00		0.85	
Satd. Flow (perm)		1790			1653	1583		1543	1583		1575	
Volume (vph)	10	290	75	60	315	45	45	85	80	70	145	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	322	83	67	350	50	50	94	89	78	161	17
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	67	0	0	0
Lane Group Flow (vph)	0	416	0	0	417	24	0	144	22	0	256	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		23.0			23.0	23.0		11.4	11.4		11.4	
Effective Green, g (s)		24.0			24.0	24.0		12.4	12.4		12.4	
Actuated g/C Ratio		0.49			0.49	0.49		0.25	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)		873			806	772		389	399		397	
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.25	0.02		0.09	0.01		c0.16	
v/c Ratio		0.48			0.52	0.03		0.37	0.06		0.64	
Uniform Delay, d1		8.4			8.6	6.6		15.2	14.0		16.4	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.4			0.6	0.0		0.6	0.1		3.6	
Delay (s)		8.8			9.2	6.6		15.8	14.0		20.0	
Level of Service		A			A	A		B	B		C	
Approach Delay (s)		8.8			8.9			15.1			20.0	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.16	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	289	1863	1801	1583
Volume (vph)	95	210	60	460	855	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	106	233	67	511	950	67
RTOR Reduction (vph)	0	117	0	0	0	23
Lane Group Flow (vph)	106	116	67	511	950	44
Turn Type		Prot	Perm			Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	12.6	12.6	40.0	40.0	40.0	40.0
Effective Green, g (s)	13.6	13.6	41.0	41.0	41.0	41.0
Actuated g/C Ratio	0.22	0.22	0.65	0.65	0.65	0.65
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)	372	344	189	1220	1180	1037
v/s Ratio Prot	0.06	c0.07		0.27	c0.53	
v/s Ratio Perm			0.23			0.03
v/c Ratio	0.28	0.34	0.35	0.42	0.81	0.04
Uniform Delay, d1	20.4	20.7	4.9	5.1	7.9	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.6	5.1	1.1	5.9	0.1
Delay (s)	20.9	21.3	10.0	6.2	13.8	3.9
Level of Service	C	C	A	A	B	A
Approach Delay (s)	21.1			6.6	13.1	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.93			0.99		1.00	0.99	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1914			1832			1967		1711	1778	
Flt Permitted		0.63			0.96			0.95		0.37	1.00	
Satd. Flow (perm)		1238			1769			1875		672	1778	
Volume (vph)	80	105	30	25	100	150	15	305	20	245	715	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	89	117	33	28	111	167	17	339	22	272	794	72
RTOR Reduction (vph)	0	8	0	0	60	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	231	0	0	246	0	0	376	0	272	863	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.4			15.4			23.5		36.7	36.7	
Effective Green, g (s)		16.4			16.4			24.5		37.7	37.7	
Actuated g/C Ratio		0.25			0.25			0.38		0.58	0.58	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		313			447			708		538	1033	
v/s Ratio Prot										0.07	c0.49	
v/s Ratio Perm		c0.19			0.14			0.20		0.22		
v/c Ratio		0.74			0.55			0.53		0.51	0.84	
Uniform Delay, d1		22.3			21.1			15.7		8.4	11.1	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		8.7			1.5			0.8		0.8	5.9	
Delay (s)		31.0			22.5			16.5		9.2	17.0	
Level of Service		C			C			B		A	B	
Approach Delay (s)		31.0			22.5			16.5			15.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	130	105	45	175	20	50	175	15	25	245	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	144	117	50	194	22	56	194	17	28	272	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	278	267	267	311
Volume Left (vph)	17	50	56	28
Volume Right (vph)	117	22	17	11
Hadj (s)	-0.21	0.02	0.04	0.03
Departure Headway (s)	6.2	6.4	6.4	6.3
Degree Utilization, x	0.48	0.48	0.48	0.55
Capacity (veh/h)	518	498	505	517
Control Delay (s)	14.8	15.2	15.1	16.6
Approach Delay (s)	14.8	15.2	15.1	16.6
Approach LOS	B	C	C	C

Intersection Summary			
Delay	15.5		
HCM Level of Service	C		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	130	310	60	185	20	230	210	60	15	370	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	144	344	67	206	22	256	233	67	17	411	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	500	294	556	439
Volume Left (vph)	11	67	256	17
Volume Right (vph)	344	22	67	11
Hadj (s)	-0.37	0.03	0.05	0.03
Departure Headway (s)	8.6	9.6	9.1	9.0
Degree Utilization, x	1.20	0.79	1.40	1.10
Capacity (veh/h)	422	370	407	408
Control Delay (s)	138.3	39.9	219.2	105.7
Approach Delay (s)	138.3	39.9	219.2	105.7
Approach LOS	F	E	F	F

Intersection Summary			
Delay	139.2		
HCM Level of Service	F		
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	65	135	15	20	135	135	10	145	15	240	330	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	150	17	22	150	150	11	161	17	267	367	39

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	239	322	189	672
Volume Left (vph)	72	22	11	267
Volume Right (vph)	17	150	17	39
Hadj (s)	0.05	-0.23	-0.01	0.08
Departure Headway (s)	7.4	6.8	7.3	6.5
Degree Utilization, x	0.49	0.61	0.38	1.22
Capacity (veh/h)	460	508	451	543
Control Delay (s)	17.1	20.1	14.8	136.2
Approach Delay (s)	17.1	20.1	14.8	136.2
Approach LOS	C	C	B	F

Intersection Summary			
Delay	73.8		
HCM Level of Service	F		
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	25	15	5	30	15	510	35	35	875	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	28	17	6	33	17	567	39	39	972	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1711	1694	978	1706	1681	586	983			606		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1711	1694	978	1706	1681	586	983			606		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	94	91	72	94	93	98			96		
cM capacity (veh/h)	61	87	304	59	89	510	702			972		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	44	56	622	1022
Volume Left	11	17	17	39
Volume Right	28	33	39	11
cSH	131	136	702	972
Volume to Capacity	0.34	0.41	0.02	0.04
Queue Length 95th (ft)	34	44	2	3
Control Delay (s)	45.9	48.7	0.6	1.1
Lane LOS	E	E	A	A
Approach Delay (s)	45.9	48.7	0.6	1.1
Approach LOS	E	E		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	30	30	495	60	45	885
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	33	550	67	50	983
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			600			
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	1667	583			617	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1759	526			564	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	57	93			94	
cM capacity (veh/h)	77	485			885	

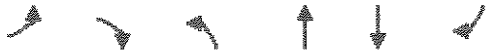
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	67	617	1033
Volume Left	33	0	50
Volume Right	33	67	0
cSH	133	1700	885
Volume to Capacity	0.50	0.36	0.06
Queue Length 95th (ft)	59	0	4
Control Delay (s)	56.5	0.0	1.6
Lane LOS	F		A
Approach Delay (s)	56.5	0.0	1.6
Approach LOS	F		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	5	30	505	15	35	900
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	33	561	17	39	1000
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.57					
vC, conflicting volume	1647	569			578	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2134	569			578	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	94			96	
cM capacity (veh/h)	30	521			996	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	39	578	1039
Volume Left	6	0	39
Volume Right	33	17	0
cSH	155	1700	996
Volume to Capacity	0.25	0.34	0.04
Queue Length 95th (ft)	24	0	3
Control Delay (s)	35.8	0.0	1.1
Lane LOS	E		A
Approach Delay (s)	35.8	0.0	1.1
Approach LOS	E		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	65	15	490	985	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	72	17	544	1094	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.62	0.60	0.60			
vC, conflicting volume	1678	1100	1106			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2025	1166	1176			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	49	95			
cM capacity (veh/h)	37	142	357			

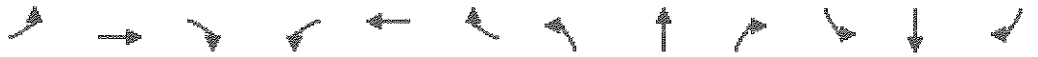
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	561	1106
Volume Left	6	17	0
Volume Right	72	0	11
cSH	118	357	1700
Volume to Capacity	0.66	0.05	0.65
Queue Length 95th (ft)	86	4	0
Control Delay (s)	80.8	1.5	0.0
Lane LOS	F	A	
Approach Delay (s)	80.8	1.5	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1846		1770	1784			1942			1752	
Flt Permitted	0.29	1.00		0.17	1.00			0.88			0.95	
Satd. Flow (perm)	514	1846		318	1784			1728			1666	
Volume (vph)	25	565	35	75	455	30	50	205	30	35	245	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	628	39	83	506	33	56	228	33	39	272	61
RTOR Reduction (vph)	0	3	0	0	3	0	0	4	0	0	7	0
Lane Group Flow (vph)	28	664	0	83	536	0	0	313	0	0	365	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	25.6	25.6		25.6	25.6			19.4			19.4	
Effective Green, g (s)	26.6	26.6		26.6	26.6			20.4			20.4	
Actuated g/C Ratio	0.44	0.44		0.44	0.44			0.34			0.34	
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)	229	821		141	794			589			568	
v/s Ratio Prot		c0.36			0.30							
v/s Ratio Perm	0.05			0.26				0.18			c0.22	
v/c Ratio	0.12	0.81		0.59	0.68			0.53			0.64	
Uniform Delay, d1	9.7	14.4		12.5	13.2			15.9			16.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	5.9		6.2	2.3			0.9			2.5	
Delay (s)	10.0	20.3		18.6	15.5			16.8			19.1	
Level of Service	A	C		B	B			B			B	
Approach Delay (s)		19.9			15.9			16.8			19.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.96				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1882		1652	1729				
Flt Permitted	0.25	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	504	1739			1882		1652	1729				
Volume (vph)	45	540	0	0	510	40	60	250	90	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	600	0	0	567	44	67	278	100	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	11	0	0	0	0
Lane Group Flow (vph)	50	600	0	0	607	0	67	367	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	23.8	23.8			23.8		16.4	16.4				
Effective Green, g (s)	24.8	24.8			24.8		17.4	17.4				
Actuated g/C Ratio	0.47	0.47			0.47		0.33	0.33				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	238	820			887		546	572				
v/s Ratio Prot		c0.35			0.32			c0.21				
v/s Ratio Perm	0.10						0.04					
v/c Ratio	0.21	0.73			0.68		0.12	0.64				
Uniform Delay, d1	8.2	11.2			10.8		12.3	14.9				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.4	3.4			2.2		0.1	2.5				
Delay (s)	8.6	14.6			13.1		12.4	17.4				
Level of Service	A	B			B		B	B				
Approach Delay (s)		14.1			13.1			16.6			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.7%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1657		1711	1801	1531		1620		1652	1739	1583
Flt Permitted	0.41	1.00		0.37	1.00	1.00		0.69		0.67	1.00	1.00
Satd. Flow (perm)	670	1657		674	1801	1531		1121		1156	1739	1583
Volume (vph)	105	355	30	70	350	165	10	80	25	215	305	100
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	117	394	33	78	389	183	11	89	28	239	339	111
RTOR Reduction (vph)	0	3	0	0	0	107	0	10	0	0	0	72
Lane Group Flow (vph)	117	424	0	78	389	76	0	118	0	239	339	39
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	23.9	23.9		23.5	23.5	23.5		8.4		20.0	20.0	20.0
Effective Green, g (s)	24.9	24.9		24.5	24.5	24.5		9.4		21.0	21.0	21.0
Actuated g/C Ratio	0.42	0.42		0.41	0.41	0.41		0.16		0.36	0.36	0.36
Clearance Time (s)	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
Lane Grp Cap (vph)	282	698		279	747	635		178		475	618	562
v/s Ratio Prot		c0.26			0.22					0.06	c0.19	
v/s Ratio Perm	0.17			0.12		0.05		c0.11		0.11		0.02
v/c Ratio	0.41	0.61		0.28	0.52	0.12		0.66		0.50	0.55	0.07
Uniform Delay, d1	12.0	13.3		11.5	12.9	10.7		23.4		17.1	15.3	12.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	1.5		0.5	0.7	0.1		8.9		0.8	1.0	0.1
Delay (s)	13.0	14.8		12.0	13.6	10.7		32.3		18.0	16.3	12.6
Level of Service	B	B		B	B	B		C		B	B	B
Approach Delay (s)		14.4			12.6			32.3			16.3	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.98			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1735	1478	1486	1528			1826	1794	1593	1825	
Flt Permitted		0.97	1.00	0.43	1.00			0.82	1.00	0.64	1.00	
Satd. Flow (perm)		1695	1478	673	1528			1526	1794	1065	1825	
Volume (vph)	15	340	85	60	330	60	70	105	65	95	125	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	378	94	67	367	67	78	117	72	106	139	22
RTOR Reduction (vph)	0	0	32	0	8	0	0	0	38	0	6	0
Lane Group Flow (vph)	0	395	62	67	426	0	0	195	34	106	155	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		17.6	17.6	17.6	17.6			12.6	12.6	12.6	12.6	
Effective Green, g (s)		18.6	18.6	18.6	18.6			13.6	13.6	13.6	13.6	
Actuated g/C Ratio		0.41	0.41	0.41	0.41			0.30	0.30	0.30	0.30	
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)		698	608	277	629			459	540	320	549	
v/s Ratio Prot					c0.28						0.09	
v/s Ratio Perm		0.23	0.04	0.10				c0.13	0.02	0.10		
v/c Ratio		0.57	0.10	0.24	0.68			0.42	0.06	0.33	0.28	
Uniform Delay, d1		10.2	8.2	8.7	10.8			12.7	11.3	12.3	12.1	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.1	0.1	0.5	2.9			0.6	0.0	0.6	0.3	
Delay (s)		11.3	8.2	9.1	13.7			13.3	11.3	12.9	12.4	
Level of Service		B	A	A	B			B	B	B	B	
Approach Delay (s)		10.7			13.1			12.8			12.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	45.2	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	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			1.00			1.00	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1784			1926			1855			2101	
Flt Permitted		0.95			0.89			0.99			0.99	
Satd. Flow (perm)		1703			1744			1834			2090	
Volume (vph)	15	45	20	20	30	5	10	445	10	5	450	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	22	22	33	6	11	494	11	6	500	17
RTOR Reduction (vph)	0	14	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	75	0	0	61	0	0	515	0	0	522	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		341			349			711			810	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			c0.28			0.25	
v/c Ratio		0.22			0.17			0.72			0.64	
Uniform Delay, d1		26.8			26.5			20.9			20.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.5			1.1			6.3			3.9	
Delay (s)		28.2			27.6			27.2			23.9	
Level of Service		C			C			C			C	
Approach Delay (s)		28.2			27.6			27.2			23.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1879		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1879		
Volume (vph)	15	350	20	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	389	22	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	416	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	493		
v/s Ratio Prot	0.01	c0.22		
v/s Ratio Perm				
v/c Ratio	0.03	0.84		
Uniform Delay, d1	22.0	28.0		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	16.1		
Delay (s)	22.1	44.1		
Level of Service	C	D		
Approach Delay (s)		43.2		
Approach LOS		D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1801	1583		1805	1583	1770	3534		1770	3504	
Flt Permitted		0.77	1.00		0.79	1.00	0.13	1.00		0.22	1.00	
Satd. Flow (perm)		1434	1583		1471	1583	242	3534		413	3504	
Volume (vph)	55	25	240	35	20	35	5	1070	10	30	1065	75
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	28	267	39	22	39	6	1189	11	33	1183	83
RTOR Reduction (vph)	0	0	214	0	0	31	0	1	0	0	6	0
Lane Group Flow (vph)	0	89	53	0	61	8	6	1199	0	33	1260	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		9.6	9.6		9.6	9.6	30.8	30.8		26.8	26.8	
Effective Green, g (s)		9.6	9.6		9.6	9.6	30.8	30.8		26.8	26.8	
Actuated g/C Ratio		0.20	0.20		0.20	0.20	0.64	0.64		0.55	0.55	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		284	314		292	314	154	2249		229	1940	
v/s Ratio Prot								c0.34			c0.36	
v/s Ratio Perm		c0.06	0.03		0.04	0.00	0.02			0.08		
v/c Ratio		0.31	0.17		0.21	0.02	0.04	0.53		0.14	0.65	
Uniform Delay, d1		16.6	16.1		16.2	15.6	3.3	4.8		5.2	7.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.3		0.4	0.0	0.1	0.2		0.3	0.8	
Delay (s)		17.2	16.3		16.6	15.7	3.4	5.1		5.5	8.3	
Level of Service		B	B		B	B	A	A		A	A	
Approach Delay (s)		16.6			16.2			5.1			8.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1478	1770	1909		1652	3297		1652	3297	
Flt Permitted		0.79	1.00	0.71	1.00		0.16	1.00		0.95	1.00	
Satd. Flow (perm)		1415	1478	1329	1909		272	3297		1652	3297	
Volume (vph)	35	25	335	30	20	35	260	1285	15	45	1210	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	28	372	33	22	39	289	1428	17	50	1344	17
RTOR Reduction (vph)	0	0	330	0	35	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	67	42	33	26	0	289	1444	0	50	1360	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		41.4	41.4		3.7	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		42.4	42.4		3.7	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.62	0.62		0.05	0.43	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		161	169	152	218		508	2044		89	1412	
v/s Ratio Prot					0.01		0.14	c0.44		0.03	c0.41	
v/s Ratio Perm		c0.05	0.03	0.02			0.21					
v/c Ratio		0.42	0.25	0.22	0.12		0.57	0.71		0.56	0.96	
Uniform Delay, d1		28.2	27.6	27.5	27.2		16.4	8.8		31.6	19.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.3	0.3	0.1		4.6	2.1		4.8	16.6	
Delay (s)		28.8	27.9	27.8	27.3		21.0	10.9		36.3	35.6	
Level of Service		C	C	C	C		C	B		D	D	
Approach Delay (s)		28.1			27.5			12.6			35.7	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1705			3539			3538	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1705			3539			3538	
Volume (vph)	0	0	0	975	135	0	0	955	0	0	1875	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1083	150	0	0	1061	0	0	2083	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	601	632	0	0	1061	0	0	2089	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				34.0	34.0			54.0			54.0	
Effective Green, g (s)				36.0	36.0			56.0			56.0	
Actuated g/C Ratio				0.36	0.36			0.56			0.56	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				605	614			1982			1981	
v/s Ratio Prot								0.30			c0.59	
v/s Ratio Perm				0.36	0.37							
v/c Ratio				0.99	1.03			0.54			1.05	
Uniform Delay, d1				31.9	32.0			13.8			22.0	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				34.7	44.0			0.3			36.4	
Delay (s)				66.6	76.0			14.1			58.4	
Level of Service				E	E			B			E	
Approach Delay (s)		0.0			71.4			14.1			58.4	
Approach LOS		A			E			B			E	

Intersection Summary			
HCM Average Control Delay	51.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.2%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	135	60	30	110	25	120	285	50	65	280	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	150	67	33	122	28	133	317	56	72	311	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	239	183	506	411
Volume Left (vph)	22	33	133	72
Volume Right (vph)	67	28	56	28
Hadj (s)	-0.11	-0.02	0.02	0.03
Departure Headway (s)	7.5	7.8	6.6	6.8
Degree Utilization, x	0.50	0.40	0.93	0.78
Capacity (veh/h)	442	411	535	504
Control Delay (s)	17.7	15.9	48.2	29.8
Approach Delay (s)	17.7	15.9	48.2	29.8
Approach LOS	C	C	E	D

Intersection Summary			
Delay	32.7		
HCM Level of Service	D		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	140	5	545	215	0	855
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	156	6	606	239	0	950
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.77					
vC, conflicting volume	1675	725			844	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1873	725			844	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	99			100	
cM capacity (veh/h)	61	425			792	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	161	844	950
Volume Left	156	0	0
Volume Right	6	239	0
cSH	63	1700	792
Volume to Capacity	2.56	0.50	0.00
Queue Length 95th (ft)	401	0	0
Control Delay (s)	847.4	0.0	0.0
Lane LOS	F		
Approach Delay (s)	847.4	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	69.8		
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↑			↑↑	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	0	35	10	0	10	10	1115	5	5	1145	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	0	39	11	0	11	11	1239	6	6	1272	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked	0.99	0.99		0.99	0.99	0.99				0.99		
vC, conflicting volume	1950	2564	650	1950	2575	622	1300			1244		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1950	2568	650	1950	2580	611	1300			1238		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	100	91	67	100	97	98			99		
cM capacity (veh/h)	36	25	412	34	24	433	529			554		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	50	22	631	625	642	664
Volume Left	11	11	11	0	6	0
Volume Right	39	11	0	6	0	28
cSH	125	63	529	1700	554	1700
Volume to Capacity	0.40	0.35	0.02	0.37	0.01	0.39
Queue Length 95th (ft)	42	33	2	0	1	0
Control Delay (s)	51.7	90.9	0.6	0.0	0.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	51.7	90.9	0.3		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	48.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	100	20	30	125	30	55
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	111	22	33	139	33	61
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			133		328	122
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			133		328	122
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		95	93
cM capacity (veh/h)			1451		651	929

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	133	172	94
Volume Left	0	33	33
Volume Right	22	0	61
cSH	1700	1451	807
Volume to Capacity	0.08	0.02	0.12
Queue Length 95th (ft)	0	2	10
Control Delay (s)	0.0	1.6	10.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.6	10.0
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	EJD	Intersection	ROUTE 7/LOCUST/LEDGE
Agency/Co.	CHA	Jurisdiction	TOWN OF BURLINGTON
Date Performed	2/18/2005	Analysis Year	2003 EXISTING
Analysis Time Period	PM PEAK HOUR		

Project Description	BURLINGTON
East/West Street:	LOCUST/LEDGE
North/South Street:	ROUTE 7
Intersection Orientation:	North-South
Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	780	215	15	965	15
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	866	238	16	1072	16
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	1	0
Configuration		T	TR	LTR		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	0	45	0	10	75
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	0	50	0	11	83
Percent Heavy Vehicles	0	0	2	0	2	2
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	1	0	1	0
Configuration			R			TR

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LTR			R			TR
v (vph)		16			50			94
C (m) (vph)		628			477			142
v/c		0.03			0.10			0.66
95% queue length		0.08			0.35			3.65
Control Delay		10.9			13.4			69.8
LOS		B			B			F
Approach Delay	--	--	13.4			69.8		
Approach LOS	--	--	B			F		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	EJD	Intersection	ROUTE 7/SOUTH WILLARD
Agency/Co.	CHA	Jurisdiction	TOWN OF BURLINGTON
Date Performed	2/18/2005	Analysis Year	2003 EXISTING
Analysis Time Period	PM PEAK HOUR		
Project Description	BURLINGTON		
East/West Street:	SOUTH WILLARD	North/South Street:	ROUTE 7
Intersection Orientation:	North-South	Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	65	715	0	0	995	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	72	794	0	0	1105	0
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT				T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	160	0	0	0	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	177	0	0	0	0
Percent Heavy Vehicles	0	2	2	0	2	2
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	0	0
Configuration			TR			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT				TR			
v (vph)	72				177			
C (m) (vph)	632				44			
v/c	0.11				4.02			
95% queue length	0.38				19.95			
Control Delay	11.4				1548			
LOS	B				F			
Approach Delay	--	--	1548					
Approach LOS	--	--	F					

NO-BUILD ALTERNATIVE

2008 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1828	1583		1819	1583		3492		1770	1855	
Flt Permitted		0.85	1.00		0.83	1.00		0.85		0.95	1.00	
Satd. Flow (perm)		1583	1583		1537	1583		2992		1770	1855	
Volume (vph)	15	25	25	50	55	145	35	300	20	235	565	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	28	28	56	61	161	39	333	22	261	628	17
RTOR Reduction (vph)	0	0	24	0	0	93	0	0	0	0	0	0
Lane Group Flow (vph)	0	45	4	0	117	68	0	394	0	261	645	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		7.4	7.4		7.4	20.5		13.2		13.1	31.3	
Effective Green, g (s)		8.4	8.4		8.4	22.5		14.2		14.1	32.3	
Actuated g/C Ratio		0.16	0.16		0.16	0.42		0.27		0.26	0.60	
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)		249	249		241	666		794		466	1120	
v/s Ratio Prot			0.00			0.04				0.15	c0.35	
v/s Ratio Perm		0.03			c0.08			0.13				
v/c Ratio		0.18	0.02		0.49	0.10		0.50		0.56	0.58	
Uniform Delay, d1		19.6	19.1		20.6	9.4		16.6		17.0	6.4	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		1.5	0.1		0.5		1.5	0.7	
Delay (s)		19.9	19.1		22.1	9.4		17.1		18.6	7.2	
Level of Service		B	B		C	A		B		B	A	
Approach Delay (s)		19.6			14.8			17.1			10.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.88			1.00			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1863			1631			1855			1827	
Flt Permitted	0.70	1.00			0.99			0.99			0.83	
Satd. Flow (perm)	1295	1863			1622			1834			1542	
Volume (vph)	15	30	0	5	5	105	5	235	5	170	440	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	33	0	6	6	117	6	261	6	189	489	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	17	33	0	0	129	0	0	273	0	0	711	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.9	22.9			22.9			35.7			35.7	
Effective Green, g (s)	23.9	23.9			23.9			36.7			36.7	
Actuated g/C Ratio	0.35	0.35			0.35			0.53			0.53	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	451	649			565			981			825	
v/s Ratio Prot		0.02										
v/s Ratio Perm	0.01				c0.08			0.15			c0.46	
v/c Ratio	0.04	0.05			0.23			0.28			0.86	
Uniform Delay, d1	14.8	14.8			15.8			8.7			13.8	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1			0.9			0.2			9.2	
Delay (s)	14.9	15.0			16.8			8.9			23.0	
Level of Service	B	B			B			A			C	
Approach Delay (s)		15.0			16.8			8.9			23.0	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.7%	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		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.90			0.98			0.99	
Flt Protected		0.99			0.99			0.99			0.96	
Satd. Flow (prot)		1732			1608			1742			1717	
Flt Permitted		0.94			0.96			0.94			0.74	
Satd. Flow (perm)		1646			1560			1654			1324	
Volume (vph)	5	15	5	40	35	220	5	20	5	365	55	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	17	6	44	39	244	6	22	6	406	61	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	29	0	0	327	0	0	34	0	0	495	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		20.9			20.9			28.5			27.5	
Effective Green, g (s)		20.9			20.9			28.5			28.5	
Actuated g/C Ratio		0.36			0.36			0.50			0.50	
Clearance Time (s)		4.0			4.0			4.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		599			568			821			657	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.21			0.02			c0.37	
v/c Ratio		0.05			0.58			0.04			0.75	
Uniform Delay, d1		11.8			14.7			7.4			11.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			4.2			0.0			4.9	
Delay (s)		12.0			18.9			7.4			16.5	
Level of Service		B			B			A			B	
Approach Delay (s)		12.0			18.9			7.4			16.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.96			1.00	0.85		1.00	0.85		0.98	
Flt Protected		0.99			1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1782			1861	1583		1801	1583		1804	
Flt Permitted		0.91			0.99	1.00		0.65	1.00		0.88	
Satd. Flow (perm)		1638			1847	1583		1204	1583		1611	
Volume (vph)	40	195	90	5	275	65	245	110	10	45	155	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	217	100	6	306	72	272	122	11	50	172	44
RTOR Reduction (vph)	0	0	0	0	0	50	0	0	6	0	0	0
Lane Group Flow (vph)	0	361	0	0	312	22	0	394	5	0	266	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		16.6			16.6	16.6		26.8	26.8		26.8	
Effective Green, g (s)		17.6			17.6	17.6		27.8	27.8		27.8	
Actuated g/C Ratio		0.30			0.30	0.30		0.48	0.48		0.48	
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)		495			559	479		575	756		770	
v/s Ratio Prot												
v/s Ratio Perm		c0.22			0.17	0.01		c0.33	0.00		0.17	
v/c Ratio		0.73			0.56	0.05		0.69	0.01		0.35	
Uniform Delay, d1		18.2			17.0	14.4		11.8	8.0		9.5	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		5.3			1.2	0.0		3.4	0.0		0.3	
Delay (s)		23.5			18.2	14.4		15.2	8.0		9.8	
Level of Service		C			B	B		B	A		A	
Approach Delay (s)		23.5			17.5			15.0			9.8	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.36	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	652	1863	1801	1583
Volume (vph)	55	100	140	570	580	180
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	111	156	633	644	200
RTOR Reduction (vph)	0	92	0	0	0	56
Lane Group Flow (vph)	61	19	156	633	644	144
Turn Type		Prot	Perm			Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	11.4	11.4	52.1	52.1	52.1	52.1
Effective Green, g (s)	12.4	12.4	53.1	53.1	53.1	53.1
Actuated g/C Ratio	0.17	0.17	0.72	0.72	0.72	0.72
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)	289	267	471	1346	1301	1144
v/s Ratio Prot	c0.04	0.01		0.34	c0.36	
v/s Ratio Perm			0.24			0.09
v/c Ratio	0.21	0.07	0.33	0.47	0.50	0.13
Uniform Delay, d1	26.3	25.7	3.7	4.3	4.4	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	1.9	1.2	1.3	0.2
Delay (s)	26.7	25.8	5.6	5.5	5.8	3.3
Level of Service	C	C	A	A	A	A
Approach Delay (s)	26.1			5.5	5.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	73.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.5%	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		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.99			0.91			1.00		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1927			1809			1980		1711	1761	
Flt Permitted		0.55			0.99			0.99		0.24	1.00	
Satd. Flow (perm)		1085			1795			1959		439	1761	
Volume (vph)	60	70	10	10	115	235	10	525	10	135	430	75
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	78	11	11	128	261	11	583	11	150	478	83
RTOR Reduction (vph)	0	4	0	0	92	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	152	0	0	308	0	0	604	0	150	554	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.5			15.5			23.6		34.4	34.4	
Effective Green, g (s)		16.5			16.5			24.6		35.4	35.4	
Actuated g/C Ratio		0.26			0.26			0.39		0.56	0.56	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		286			472			769		386	994	
v/s Ratio Prot										0.04	c0.31	
v/s Ratio Perm		0.14			c0.17			c0.31		0.18		
v/c Ratio		0.53			0.65			0.79		0.39	0.56	
Uniform Delay, d1		19.8			20.5			16.7		9.3	8.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.9			3.2			5.3		0.7	0.7	
Delay (s)		21.7			23.8			22.0		10.0	9.4	
Level of Service		C			C			C		A	A	
Approach Delay (s)		21.7			23.8			22.0			9.5	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	100	85	25	100	25	10	330	45	20	225	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	111	94	28	111	28	11	367	50	22	250	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	217	167	428	278
Volume Left (vph)	11	28	11	22
Volume Right (vph)	94	28	50	6
Hadj (s)	-0.22	-0.03	-0.03	0.04
Departure Headway (s)	6.1	6.4	5.6	6.0
Degree Utilization, x	0.37	0.30	0.67	0.46
Capacity (veh/h)	511	476	610	548
Control Delay (s)	12.7	12.2	19.4	14.0
Approach Delay (s)	12.7	12.2	19.4	14.0
Approach LOS	B	B	C	B

Intersection Summary			
Delay	15.6		
HCM Level of Service	C		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	55	310	70	100	10	120	370	55	5	325	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	61	344	78	111	11	133	411	61	6	361	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	411	200	606	372
Volume Left (vph)	6	78	133	6
Volume Right (vph)	344	11	61	6
Hadj (s)	-0.47	0.08	0.02	0.03
Departure Headway (s)	7.4	8.8	7.7	7.9
Degree Utilization, x	0.85	0.49	1.30	0.82
Capacity (veh/h)	471	368	475	442
Control Delay (s)	39.7	20.0	172.9	37.9
Approach Delay (s)	39.7	20.0	172.9	37.9
Approach LOS	E	C	F	E

Intersection Summary			
Delay	87.6		
HCM Level of Service	F		
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	65	145	25	40	140	245	10	160	20	150	250	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	161	28	44	156	272	11	178	22	167	278	50

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	261	472	211	494
Volume Left (vph)	72	44	11	167
Volume Right (vph)	28	272	22	50
Hadj (s)	0.03	-0.29	-0.02	0.04
Departure Headway (s)	8.2	7.2	8.4	7.6
Degree Utilization, x	0.59	0.95	0.49	1.04
Capacity (veh/h)	418	489	403	471
Control Delay (s)	22.5	54.7	19.3	80.5
Approach Delay (s)	22.5	54.7	19.3	80.5
Approach LOS	C	F	C	F

Intersection Summary			
Delay	52.6		
HCM Level of Service	F		
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	15	40	5	40	15	600	20	40	710	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	17	44	6	44	17	667	22	44	789	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1639	1603	792	1611	1594	678	794			689		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1639	1603	792	1611	1594	678	794			689		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	94	96	39	94	90	98			95		
cM capacity (veh/h)	66	98	389	73	100	452	827			905		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	94	706	839
Volume Left	6	44	17	44
Volume Right	17	44	22	6
cSH	151	124	827	905
Volume to Capacity	0.18	0.76	0.02	0.05
Queue Length 95th (ft)	16	110	2	4
Control Delay (s)	34.1	94.2	0.5	1.3
Lane LOS	D	F	A	A
Approach Delay (s)	34.1	94.2	0.5	1.3
Approach LOS	D	F		

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	70	65	555	70	45	690
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	72	617	78	50	767
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			600			
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	1522	656			694	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1620	591			637	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	13	83			94	
cM capacity (veh/h)	90	427			797	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	150	694	817
Volume Left	78	0	50
Volume Right	72	78	0
cSH	145	1700	797
Volume to Capacity	1.04	0.41	0.06
Queue Length 95th (ft)	196	0	5
Control Delay (s)	146.6	0.0	1.7
Lane LOS	F		A
Approach Delay (s)	146.6	0.0	1.7
Approach LOS	F		

Intersection Summary			
Average Delay	14.0		
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	30	70	665	40	40	620
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	78	739	44	44	689
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.85					
vC, conflicting volume	1539	761			783	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1637	761			783	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	62	81			95	
cM capacity (veh/h)	89	405			835	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	111	783	733
Volume Left	33	0	44
Volume Right	78	44	0
cSH	196	1700	835
Volume to Capacity	0.57	0.46	0.05
Queue Length 95th (ft)	76	0	4
Control Delay (s)	45.1	0.0	1.4
Lane LOS	E		A
Approach Delay (s)	45.1	0.0	1.4
Approach LOS	E		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	20	170	710	625	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	22	189	789	694	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.76	0.90	0.90			
vC, conflicting volume	1875	708	722			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1950	676	692			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	95	77			
cM capacity (veh/h)	42	408	814			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	28	978	722
Volume Left	6	189	0
Volume Right	22	0	28
cSH	148	814	1700
Volume to Capacity	0.19	0.23	0.42
Queue Length 95th (ft)	17	22	0
Control Delay (s)	34.9	5.8	0.0
Lane LOS	D	A	
Approach Delay (s)	34.9	5.8	0.0
Approach LOS	D		

Intersection Summary			
Average Delay		3.9	
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1831		1770	1788			1932			1747	
Flt Permitted	0.25	1.00		0.49	1.00			0.96			0.86	
Satd. Flow (perm)	446	1831		922	1788			1865			1527	
Volume (vph)	40	270	35	40	510	25	25	235	55	45	135	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	300	39	44	567	28	28	261	61	50	150	33
RTOR Reduction (vph)	0	6	0	0	2	0	0	7	0	0	6	0
Lane Group Flow (vph)	44	333	0	44	593	0	0	343	0	0	227	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	21.6	21.6		21.6	21.6			14.5			14.5	
Effective Green, g (s)	22.6	22.6		22.6	22.6			15.5			15.5	
Actuated g/C Ratio	0.45	0.45		0.45	0.45			0.31			0.31	
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)	199	816		411	797			570			467	
v/s Ratio Prot		0.18			c0.33							
v/s Ratio Perm	0.10			0.05				c0.18			0.15	
v/c Ratio	0.22	0.41		0.11	0.74			0.60			0.49	
Uniform Delay, d1	8.6	9.5		8.2	11.6			15.0			14.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.6	0.3		0.1	3.8			1.8			0.8	
Delay (s)	9.2	9.9		8.3	15.4			16.8			15.2	
Level of Service	A	A		A	B			B			B	
Approach Delay (s)		9.8			14.9			16.8			15.2	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1871		1652	1764				
Flt Permitted	0.31	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	615	1739			1871		1652	1764				
Volume (vph)	15	315	0	0	500	65	105	190	30	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	350	0	0	556	72	117	211	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	6	0	0	0	0
Lane Group Flow (vph)	17	350	0	0	623	0	117	238	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	27.2	27.2			27.2		10.5	10.5				
Effective Green, g (s)	28.2	28.2			28.2		11.5	11.5				
Actuated g/C Ratio	0.56	0.56			0.56		0.23	0.23				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	346	979			1053		379	405				
v/s Ratio Prot		0.20			c0.33			c0.13				
v/s Ratio Perm	0.03						0.07					
v/c Ratio	0.05	0.36			0.59		0.31	0.59				
Uniform Delay, d1	4.9	6.0			7.2		16.0	17.2				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.2			0.9		0.5	2.2				
Delay (s)	5.0	6.2			8.1		16.5	19.4				
Level of Service	A	A			A		B	B				
Approach Delay (s)		6.2			8.1			18.4			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1665		1711	1801	1531		1647		1652	1739	1583
Flt Permitted	0.44	1.00		0.58	1.00	1.00		0.94		0.78	1.00	1.00
Satd. Flow (perm)	718	1665		1043	1801	1531		1558		1358	1739	1583
Volume (vph)	30	205	10	40	335	135	10	55	5	65	170	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	228	11	44	372	150	11	61	6	72	189	56
RTOR Reduction (vph)	0	2	0	0	0	82	0	3	0	0	0	37
Lane Group Flow (vph)	33	237	0	44	372	68	0	75	0	72	189	19
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	26.8	26.8		27.9	27.9	27.9		10.0		20.2	20.2	20.2
Effective Green, g (s)	27.8	27.8		28.9	28.9	28.9		11.0		21.2	21.2	21.2
Actuated g/C Ratio	0.44	0.44		0.46	0.46	0.46		0.17		0.33	0.33	0.33
Clearance Time (s)	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
Lane Grp Cap (vph)	314	729		475	820	697		270		482	581	528
v/s Ratio Prot		0.14			c0.21					0.01	c0.11	
v/s Ratio Perm	0.05			0.04		0.04		0.05		0.04		0.01
v/c Ratio	0.11	0.33		0.09	0.45	0.10		0.28		0.15	0.33	0.04
Uniform Delay, d1	10.5	11.7		9.8	11.9	9.9		22.8		15.6	15.8	14.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3		0.1	0.4	0.1		0.6		0.1	0.3	0.0
Delay (s)	10.7	12.0		9.9	12.3	9.9		23.4		15.8	16.1	14.3
Level of Service	B	B		A	B	A		C		B	B	B
Approach Delay (s)		11.8			11.5			23.4			15.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1736	1478	1486	1517			1830	1794	1593	1836	
Flt Permitted		0.99	1.00	0.62	1.00			0.87	1.00	0.57	1.00	
Satd. Flow (perm)		1718	1478	964	1517			1619	1794	952	1836	
Volume (vph)	5	200	45	20	275	70	80	145	25	20	50	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	222	50	22	306	78	89	161	28	22	56	6
RTOR Reduction (vph)	0	0	30	0	12	0	0	0	11	0	3	0
Lane Group Flow (vph)	0	228	20	22	372	0	0	250	17	22	59	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		15.9	15.9	15.9	15.9			12.8	12.8	12.8	12.8	
Effective Green, g (s)		16.9	16.9	16.9	16.9			13.8	13.8	13.8	13.8	
Actuated g/C Ratio		0.39	0.39	0.39	0.39			0.32	0.32	0.32	0.32	
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)		664	572	373	587			511	567	301	580	
v/s Ratio Prot					c0.25						0.03	
v/s Ratio Perm		0.13	0.01	0.02				c0.15	0.01	0.02		
v/c Ratio		0.34	0.03	0.06	0.63			0.49	0.03	0.07	0.10	
Uniform Delay, d1		9.5	8.3	8.4	10.9			12.1	10.3	10.5	10.6	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.0	0.1	2.2			0.7	0.0	0.1	0.1	
Delay (s)		9.8	8.4	8.5	13.1			12.8	10.3	10.6	10.6	
Level of Service		A	A	A	B			B	B	B	B	
Approach Delay (s)		9.5			12.9			12.6			10.6	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	43.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.98			1.00			1.00	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1752			1923			1856			2103	
Flt Permitted		0.96			0.96			0.98			0.99	
Satd. Flow (perm)		1701			1861			1826			2082	
Volume (vph)	10	30	25	5	20	5	20	465	5	5	235	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	33	28	6	22	6	22	517	6	6	261	6
RTOR Reduction (vph)	0	22	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	50	0	0	34	0	0	544	0	0	272	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		340			372			708			807	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.30			0.13	
v/c Ratio		0.15			0.09			0.77			0.34	
Uniform Delay, d1		26.4			26.1			21.4			17.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			0.5			7.9			1.1	
Delay (s)		27.3			26.6			29.2			18.4	
Level of Service		C			C			C			B	
Approach Delay (s)		27.3			26.6			29.2			18.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.98		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1866		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1866		
Volume (vph)	5	225	30	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	250	33	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	288	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	490		
v/s Ratio Prot	0.00	c0.15		
v/s Ratio Perm				
v/c Ratio	0.01	0.59		
Uniform Delay, d1	21.8	25.7		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	5.1		
Delay (s)	21.9	30.8		
Level of Service	C	C		
Approach Delay (s)		30.7		
Approach LOS		C		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583		1817	1583	1770	3536		1770	3509	
Flt Permitted		0.76	1.00		0.82	1.00	0.22	1.00		0.24	1.00	
Satd. Flow (perm)		1410	1583		1536	1583	401	3536		452	3509	
Volume (vph)	60	20	160	15	15	20	275	1045	5	20	745	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	22	178	17	17	22	306	1161	6	22	828	50
RTOR Reduction (vph)	0	0	152	0	0	19	0	0	0	0	6	0
Lane Group Flow (vph)	0	89	26	0	34	3	306	1167	0	22	872	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		7.0	7.0		7.0	7.0	33.5	33.5		22.7	22.7	
Effective Green, g (s)		7.0	7.0		7.0	7.0	33.5	33.5		22.7	22.7	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.69	0.69		0.47	0.47	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		204	228		222	228	469	2442		212	1642	
v/s Ratio Prot							c0.09	0.33			0.25	
v/s Ratio Perm		c0.06	0.02		0.02	0.00	c0.36			0.05		
v/c Ratio		0.44	0.11		0.15	0.01	0.65	0.48		0.10	0.53	
Uniform Delay, d1		18.9	18.0		18.2	17.8	4.5	3.5		7.2	9.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5	0.2		0.3	0.0	3.2	0.1		0.2	0.3	
Delay (s)		20.4	18.3		18.5	17.8	7.7	3.6		7.4	9.5	
Level of Service		C	B		B	B	A	A		A	A	
Approach Delay (s)		19.0			18.2			4.5			9.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3300		1652	3273	
Flt Permitted		0.75	1.00	0.71	1.00		0.21	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		367	3300		1652	3273	
Volume (vph)	50	10	275	15	5	10	365	1390	10	10	835	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	306	17	6	11	406	1544	11	11	928	61
RTOR Reduction (vph)	0	0	272	0	10	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	67	34	17	7	0	406	1555	0	11	984	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		585	2208		21	1368	
v/s Ratio Prot					0.00		0.18	c0.47		0.01	c0.30	
v/s Ratio Perm		c0.05	0.02	0.01			0.28					
v/c Ratio		0.45	0.21	0.11	0.03		0.69	0.70		0.52	0.72	
Uniform Delay, d1		29.1	28.3	28.0	27.8		13.1	7.3		34.4	17.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		6.7	1.9		10.4	3.3	
Delay (s)		29.9	28.6	28.2	27.8		19.7	9.2		44.8	20.3	
Level of Service		C	C	C	C		B	A		D	C	
Approach Delay (s)		28.8			28.0			11.4			20.5	
Approach LOS		C			C			B			C	

Intersection Summary				
HCM Average Control Delay	16.2	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	65.0%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1365	50	0	0	890	0	0	1195	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1517	56	0	0	989	0	0	1328	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	766	807	0	0	989	0	0	1328	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			28.7			28.7	
Effective Green, g (s)				30.0	30.0			30.7			30.7	
Actuated g/C Ratio				0.44	0.44			0.45			0.45	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				734	738			1581			1581	
v/s Ratio Prot								0.28			c0.38	
v/s Ratio Perm				0.46	0.48							
v/c Ratio				1.04	1.09			0.63			0.84	
Uniform Delay, d1				19.4	19.4			14.6			16.8	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				45.1	61.6			0.8			4.1	
Delay (s)				64.5	80.9			15.4			20.9	
Level of Service				E	F			B			C	
Approach Delay (s)		0.0			72.9			15.4			20.9	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	75	40	5	125	10	55	360	60	5	150	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	83	44	6	139	11	61	400	67	6	167	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	133	156	528	183
Volume Left (vph)	6	6	61	6
Volume Right (vph)	44	11	67	11
Hadj (s)	-0.16	0.00	-0.02	0.00
Departure Headway (s)	6.0	6.1	5.1	5.6
Degree Utilization, x	0.22	0.26	0.74	0.29
Capacity (veh/h)	530	522	689	587
Control Delay (s)	10.7	11.2	21.4	10.8
Approach Delay (s)	10.7	11.2	21.4	10.8
Approach LOS	B	B	C	B

Intersection Summary			
Delay	16.4		
HCM Level of Service	C		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	65	5	545	265	5	555
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	6	606	294	6	617
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.94					
vC, conflicting volume	1381	753			900	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1404	753			900	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	50	99			99	
cM capacity (veh/h)	144	410			755	

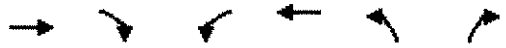
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	78	900	622
Volume Left	72	0	6
Volume Right	6	294	0
cSH	151	1700	755
Volume to Capacity	0.52	0.53	0.01
Queue Length 95th (ft)	63	0	1
Control Delay (s)	51.9	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	51.9	0.0	0.2
Approach LOS	F		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	0	70	10	0	10	45	1065	5	5	755	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	0	78	11	0	11	50	1183	6	6	839	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1586	2172	453	1794	2203	594	906			1189		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1586	2172	453	1794	2203	594	906			1189		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	67	100	86	73	100	98	93			99		
cM capacity (veh/h)	67	43	554	41	41	448	747			583		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	100	22	642	597	425	486
Volume Left	22	11	50	0	6	0
Volume Right	78	11	0	6	0	67
cSH	211	75	747	1700	583	1700
Volume to Capacity	0.47	0.30	0.07	0.35	0.01	0.29
Queue Length 95th (ft)	58	27	5	0	1	0
Control Delay (s)	36.5	72.0	1.8	0.0	0.3	0.0
Lane LOS	E	F	A		A	
Approach Delay (s)	36.5	72.0	0.9		0.1	
Approach LOS	E	F				

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	69.5%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	195	30	110	70	10	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	217	33	122	78	11	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			250		556	233
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		556	233
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		98	94
cM capacity (veh/h)			1316		447	806

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	250	200	56
Volume Left	0	122	11
Volume Right	33	0	44
cSH	1700	1316	694
Volume to Capacity	0.15	0.09	0.08
Queue Length 95th (ft)	0	8	7
Control Delay (s)	0.0	5.2	10.6
Lane LOS		A	B
Approach Delay (s)	0.0	5.2	10.6
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2008 NO BUILD*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*830*	*250*	*5*	*600*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*922*	*277*	*5*	*666*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*60*	*0*	*15*	*85*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*66*	*0*	*16*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*5*			*66*			*110*
C (m) (vph)		*578*			*444*			*235*
v/c		*0.01*			*0.15*			*0.47*
95% queue length		*0.03*			*0.52*			*2.30*
Control Delay		*11.3*			*14.5*			*33.1*
LOS		*B*			*B*			*D*
Approach Delay	--	--	*14.5*			*33.1*		
Approach LOS	--	--	*B*			*D*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2008 NO BUILD*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*70*	*760*	*0*	*0*	*620*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*77*	*844*	*0*	*0*	*688*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*140*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*155*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*77*				*155*			
C (m) (vph)	*906*				*78*			
v/c	*0.08*				*1.99*			
95% queue length	*0.28*				*13.83*			
Control Delay	*9.3*				*574.3*			
LOS	*A*				*F*			
Approach Delay	--	--	*574.3*					
Approach LOS	--	--	*F*					

NO-BUILD ALTERNATIVE

2008 PM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1832	1583		1811	1583		3449		1770	1838	
Flt Permitted		0.86	1.00		0.78	1.00		0.86		0.95	1.00	
Satd. Flow (perm)		1604	1583		1446	1583		2997		1770	1838	
Volume (vph)	25	50	45	100	75	395	60	400	70	295	300	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	56	50	111	83	439	67	444	78	328	333	33
RTOR Reduction (vph)	0	0	39	0	0	177	0	0	0	0	0	0
Lane Group Flow (vph)	0	84	11	0	194	262	0	589	0	328	366	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		13.7	13.7		13.7	29.5		17.6		15.8	38.4	
Effective Green, g (s)		14.7	14.7		14.7	31.5		18.6		16.8	39.4	
Actuated g/C Ratio		0.22	0.22		0.22	0.47		0.28		0.25	0.59	
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)		352	348		318	745		833		444	1082	
v/s Ratio Prot			0.01			0.17				c0.19	0.20	
v/s Ratio Perm		0.05			c0.13			c0.20				
v/c Ratio		0.24	0.03		0.61	0.35		0.71		0.74	0.34	
Uniform Delay, d1		21.5	20.5		23.5	11.2		21.7		23.0	7.1	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		3.4	0.3		2.8		6.3	0.2	
Delay (s)		21.8	20.5		27.0	11.5		24.5		29.4	7.2	
Level of Service		C	C		C	B		C		C	A	
Approach Delay (s)		21.4			16.2			24.5			17.7	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.90			0.99			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1840			1673			1842			1818	
Flt Permitted	0.66	1.00			0.99			0.99			0.76	
Satd. Flow (perm)	1233	1840			1657			1832			1410	
Volume (vph)	50	60	5	10	35	125	5	355	30	120	290	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	67	6	11	39	139	6	394	33	133	322	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	56	73	0	0	189	0	0	433	0	0	494	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.6	22.6			22.6			23.4			23.4	
Effective Green, g (s)	23.6	23.6			23.6			24.4			24.4	
Actuated g/C Ratio	0.42	0.42			0.42			0.44			0.44	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	520	775			698			798			614	
v/s Ratio Prot		0.04										
v/s Ratio Perm	0.05				c0.11			0.24			c0.35	
v/c Ratio	0.11	0.09			0.27			0.54			0.80	
Uniform Delay, d1	9.8	9.8			10.6			11.7			13.7	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	0.2			1.0			0.8			7.6	
Delay (s)	10.2	10.0			11.5			12.4			21.3	
Level of Service	B	B			B			B			C	
Approach Delay (s)		10.1			11.5			12.4			21.3	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	56.0	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		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.88			0.95			0.99	
Flt Protected		0.98			1.00			1.00			0.96	
Satd. Flow (prot)		1746			1575			1706			1710	
Flt Permitted		0.79			1.00			1.00			0.70	
Satd. Flow (perm)		1403			1571			1706			1255	
Volume (vph)	45	45	5	5	20	305	0	40	25	265	20	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	50	6	6	22	339	0	44	28	294	22	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	106	0	0	367	0	0	72	0	0	338	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		21.6			21.6			32.3			31.3	
Effective Green, g (s)		21.6			21.6			32.3			32.3	
Actuated g/C Ratio		0.35			0.35			0.52			0.52	
Clearance Time (s)		4.0			4.0			4.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		490			548			890			655	
v/s Ratio Prot								0.04				
v/s Ratio Perm		0.08			c0.23						c0.27	
v/c Ratio		0.22			0.67			0.08			0.52	
Uniform Delay, d1		14.2			17.1			7.4			9.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			6.4			0.0			0.7	
Delay (s)		15.2			23.5			7.4			10.4	
Level of Service		B			C			A			B	
Approach Delay (s)		15.2			23.5			7.4			10.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

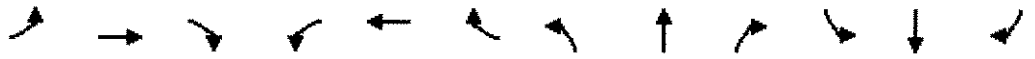
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.97			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1803			1845	1583		1808	1583		1819	
Flt Permitted		0.99			0.87	1.00		0.66	1.00		0.81	
Satd. Flow (perm)		1781			1627	1583		1224	1583		1502	
Volume (vph)	10	260	80	70	290	40	135	90	70	70	150	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	289	89	78	322	44	150	100	78	78	167	17
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	56	0	0	0
Lane Group Flow (vph)	0	389	0	0	400	20	0	250	22	0	262	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		21.1			21.1	21.1		13.0	13.0		13.0	
Effective Green, g (s)		22.1			22.1	22.1		14.0	14.0		14.0	
Actuated g/C Ratio		0.45			0.45	0.45		0.29	0.29		0.29	
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)		808			738	718		352	455		432	
v/s Ratio Prot												
v/s Ratio Perm		0.22			c0.25	0.01		c0.20	0.01		0.17	
v/c Ratio		0.48			0.54	0.03		0.71	0.05		0.61	
Uniform Delay, d1		9.3			9.6	7.4		15.5	12.5		15.0	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.5			0.8	0.0		6.6	0.0		2.4	
Delay (s)		9.7			10.5	7.4		22.1	12.6		17.4	
Level of Service		A			B	A		C	B		B	
Approach Delay (s)		9.7			10.1			19.9			17.4	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.13	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	231	1863	1801	1583
Volume (vph)	135	285	110	535	895	80
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	150	317	122	594	994	89
RTOR Reduction (vph)	0	106	0	0	0	31
Lane Group Flow (vph)	150	211	122	594	994	58
Turn Type		Prot	Perm			Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	13.4	13.4	40.0	40.0	40.0	40.0
Effective Green, g (s)	14.4	14.4	41.0	41.0	41.0	41.0
Actuated g/C Ratio	0.23	0.23	0.65	0.65	0.65	0.65
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)	389	360	149	1205	1165	1024
v/s Ratio Prot	0.09	c0.13		0.32	c0.55	
v/s Ratio Perm			0.53			0.04
v/c Ratio	0.39	0.59	0.82	0.49	0.85	0.06
Uniform Delay, d1	20.8	21.8	8.4	5.8	8.8	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	2.4	37.4	1.4	8.0	0.1
Delay (s)	21.4	24.3	45.8	7.3	16.8	4.2
Level of Service	C	C	D	A	B	A
Approach Delay (s)	23.4			13.8	15.8	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.92			0.99		1.00	0.99	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1915			1824			1970		1711	1775	
Flt Permitted		0.57			0.96			0.70		0.31	1.00	
Satd. Flow (perm)		1108			1756			1376		562	1775	
Volume (vph)	105	130	35	30	120	205	15	360	20	285	770	80
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	117	144	39	33	133	228	17	400	22	317	856	89
RTOR Reduction (vph)	0	7	0	0	64	0	0	3	0	0	4	0
Lane Group Flow (vph)	0	293	0	0	330	0	0	436	0	317	941	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		21.3			21.3			25.2		38.3	38.3	
Effective Green, g (s)		22.3			22.3			26.2		39.3	39.3	
Actuated g/C Ratio		0.31			0.31			0.36		0.54	0.54	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		341			540			497		449	962	
v/s Ratio Prot										0.09	c0.53	
v/s Ratio Perm		c0.26			0.19			0.32		0.29		
v/c Ratio		0.86			0.61			0.88		0.71	0.98	
Uniform Delay, d1		23.6			21.4			21.7		11.8	16.2	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		18.9			2.1			16.0		5.0	23.5	
Delay (s)		42.5			23.5			37.7		16.8	39.7	
Level of Service		D			C			D		B	D	
Approach Delay (s)		42.5			23.5			37.7			33.9	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	125	180	40	160	30	35	260	25	30	260	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	139	200	44	178	33	39	289	28	33	289	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	344	256	356	333
Volume Left (vph)	6	44	39	33
Volume Right (vph)	200	33	28	11
Hadj (s)	-0.31	-0.01	0.01	0.03
Departure Headway (s)	6.9	7.4	7.1	7.1
Degree Utilization, x	0.66	0.53	0.70	0.66
Capacity (veh/h)	480	424	472	464
Control Delay (s)	22.0	18.4	24.7	23.0
Approach Delay (s)	22.0	18.4	24.7	23.0
Approach LOS	C	C	C	C

Intersection Summary			
Delay	22.3		
HCM Level of Service	C		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	140	205	60	105	110	300	205	60	60	415	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	156	228	67	117	122	333	228	67	67	461	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	389	306	628	533
Volume Left (vph)	6	67	333	67
Volume Right (vph)	228	122	67	6
Hadj (s)	-0.31	-0.16	0.08	0.05
Departure Headway (s)	8.7	9.2	9.0	8.9
Degree Utilization, x	0.94	0.78	1.56	1.32
Capacity (veh/h)	408	380	405	411
Control Delay (s)	59.9	38.6	287.2	187.3
Approach Delay (s)	59.9	38.6	287.2	187.3
Approach LOS	F	E	F	F

Intersection Summary			
Delay	169.9		
HCM Level of Service	F		
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	85	130	50	30	165	145	10	170	30	245	375	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	144	56	33	183	161	11	189	33	272	417	56

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	294	378	233	744
Volume Left (vph)	94	33	11	272
Volume Right (vph)	56	161	33	56
Hadj (s)	-0.02	-0.20	-0.04	0.06
Departure Headway (s)	7.9	7.4	8.1	7.4
Degree Utilization, x	0.64	0.78	0.52	1.53
Capacity (veh/h)	433	464	410	487
Control Delay (s)	24.1	32.0	19.6	267.6
Approach Delay (s)	24.1	32.0	19.6	267.6
Approach LOS	C	D	C	F

Intersection Summary			
Delay	135.1		
HCM Level of Service	F		
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	20	20	5	30	15	615	35	35	935	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	22	22	6	33	17	683	39	39	1039	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1894	1878	1044	1883	1864	703	1050			722		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1894	1878	1044	1883	1864	703	1050			722		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	74	92	92	50	92	92	97			96		
cM capacity (veh/h)	44	67	278	44	68	438	663			880		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	39	61	739	1089
Volume Left	11	22	17	39
Volume Right	22	33	39	11
cSH	93	92	663	880
Volume to Capacity	0.42	0.66	0.03	0.04
Queue Length 95th (ft)	43	80	2	3
Control Delay (s)	69.2	99.8	0.7	1.4
Lane LOS	F	F	A	A
Approach Delay (s)	69.2	99.8	0.7	1.4
Approach LOS	F	F		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	30	35	595	75	45	945
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	39	661	83	50	1050
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			600			
pX, platoon unblocked	0.82	0.82			0.82	
vC, conflicting volume	1853	703			744	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2037	639			689	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	30	90			93	
cM capacity (veh/h)	48	392			745	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	72	744	1100
Volume Left	33	0	50
Volume Right	39	83	0
cSH	91	1700	745
Volume to Capacity	0.79	0.44	0.07
Queue Length 95th (ft)	104	0	5
Control Delay (s)	126.2	0.0	2.2
Lane LOS	F		A
Approach Delay (s)	126.2	0.0	2.2
Approach LOS	F		

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	20	35	620	35	65	1075
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	39	689	39	72	1194
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.43					
vC, conflicting volume	2047	708			728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3440	708			728	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	91			92	
cM capacity (veh/h)	3	435			876	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	61	728	1267
Volume Left	22	0	72
Volume Right	39	39	0
cSH	8	1700	876
Volume to Capacity	7.40	0.43	0.08
Queue Length 95th (ft)	Err	0	7
Control Delay (s)	Err	0.0	3.0
Lane LOS	F		A
Approach Delay (s)	Err	0.0	3.0
Approach LOS	F		

Intersection Summary			
Average Delay	299.1		
Intersection Capacity Utilization	108.3%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	75	15	625	1085	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	83	17	694	1206	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.53	0.47	0.47			
vC, conflicting volume	1939	1211	1217			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2423	1449	1460			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	0	92			
cM capacity (veh/h)	17	76	218			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	89	711	1217
Volume Left	6	17	0
Volume Right	83	0	11
cSH	63	218	1700
Volume to Capacity	1.42	0.08	0.72
Queue Length 95th (ft)	191	6	0
Control Delay (s)	370.5	3.4	0.0
Lane LOS	F	A	
Approach Delay (s)	370.5	3.4	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	17.5		
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			1.00			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1840		1770	1784			1963			1761	
Flt Permitted	0.27	1.00		0.33	1.00			0.90			0.94	
Satd. Flow (perm)	485	1840		613	1784			1778			1666	
Volume (vph)	60	405	35	50	465	30	50	215	5	35	220	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	450	39	56	517	33	56	239	6	39	244	39
RTOR Reduction (vph)	0	4	0	0	3	0	0	1	0	0	5	0
Lane Group Flow (vph)	67	485	0	56	547	0	0	300	0	0	317	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	20.1	20.1		20.1	20.1			15.3			15.3	
Effective Green, g (s)	21.1	21.1		21.1	21.1			16.3			16.3	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.33			0.33	
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)	205	776		259	753			580			543	
v/s Ratio Prot		0.26			c0.31							
v/s Ratio Perm	0.14			0.09				0.17			c0.19	
v/c Ratio	0.33	0.62		0.22	0.73			0.52			0.58	
Uniform Delay, d1	9.7	11.3		9.2	12.0			13.7			14.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	1.6		0.4	3.5			0.8			1.6	
Delay (s)	10.6	12.9		9.6	15.6			14.4			15.6	
Level of Service	B	B		A	B			B			B	
Approach Delay (s)		12.6			15.0			14.4			15.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.3%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1881		1652	1783				
Flt Permitted	0.27	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	540	1739			1881		1652	1783				
Volume (vph)	35	485	0	0	500	40	65	275	20	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	539	0	0	556	44	72	306	22	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	2	0	0	0	0
Lane Group Flow (vph)	39	539	0	0	596	0	72	326	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	21.8	21.8			21.8		13.9	13.9				
Effective Green, g (s)	22.8	22.8			22.8		14.9	14.9				
Actuated g/C Ratio	0.47	0.47			0.47		0.31	0.31				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	256	824			892		512	552				
v/s Ratio Prot		0.31			c0.32			c0.18				
v/s Ratio Perm	0.07						0.04					
v/c Ratio	0.15	0.65			0.67		0.14	0.59				
Uniform Delay, d1	7.2	9.6			9.7		12.0	14.0				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.3	1.9			1.9		0.1	1.7				
Delay (s)	7.4	11.5			11.7		12.1	15.7				
Level of Service	A	B			B		B	B				
Approach Delay (s)		11.2			11.7			15.1			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1647		1711	1801	1531		1626		1652	1739	1583
Flt Permitted	0.41	1.00		0.43	1.00	1.00		0.79		0.66	1.00	1.00
Satd. Flow (perm)	661	1647		769	1801	1531		1294		1143	1739	1583
Volume (vph)	105	295	40	70	350	155	5	90	25	210	300	85
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	117	328	44	78	389	172	6	100	28	233	333	94
RTOR Reduction (vph)	0	5	0	0	0	103	0	9	0	0	0	60
Lane Group Flow (vph)	117	367	0	78	389	69	0	125	0	233	333	34
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	22.1	22.1		21.9	21.9	21.9		8.0		19.6	19.6	19.6
Effective Green, g (s)	23.1	23.1		22.9	22.9	22.9		9.0		20.6	20.6	20.6
Actuated g/C Ratio	0.41	0.41		0.40	0.40	0.40		0.16		0.36	0.36	0.36
Clearance Time (s)	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
Lane Grp Cap (vph)	268	669		309	725	616		205		482	630	573
v/s Ratio Prot		c0.22			0.22					0.06	c0.19	
v/s Ratio Perm	0.18			0.10		0.05		0.10		0.11		0.02
v/c Ratio	0.44	0.55		0.25	0.54	0.11		0.61		0.48	0.53	0.06
Uniform Delay, d1	12.2	12.9		11.3	13.0	10.6		22.3		16.2	14.3	11.8
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.9		0.4	0.8	0.1		5.0		0.8	0.8	0.0
Delay (s)	13.3	13.8		11.7	13.7	10.7		27.4		17.0	15.1	11.9
Level of Service	B	B		B	B	B		C		B	B	B
Approach Delay (s)		13.7			12.7			27.4			15.3	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.98			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1734	1478	1486	1527			1825	1794	1593	1822	
Flt Permitted		0.97	1.00	0.48	1.00			0.82	1.00	0.64	1.00	
Satd. Flow (perm)		1690	1478	759	1527			1524	1794	1071	1822	
Volume (vph)	15	295	85	55	315	60	70	100	60	95	115	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	328	94	61	350	67	78	111	67	106	128	22
RTOR Reduction (vph)	0	0	36	0	8	0	0	0	36	0	6	0
Lane Group Flow (vph)	0	345	58	61	409	0	0	189	31	106	144	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		17.0	17.0	17.0	17.0			12.3	12.3	12.3	12.3	
Effective Green, g (s)		18.0	18.0	18.0	18.0			13.3	13.3	13.3	13.3	
Actuated g/C Ratio		0.41	0.41	0.41	0.41			0.30	0.30	0.30	0.30	
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)		687	601	308	620			458	539	322	547	
v/s Ratio Prot					c0.27						0.08	
v/s Ratio Perm		0.20	0.04	0.08				c0.12	0.02	0.10		
v/c Ratio		0.50	0.10	0.20	0.66			0.41	0.06	0.33	0.26	
Uniform Delay, d1		9.8	8.1	8.5	10.7			12.4	11.0	12.0	11.8	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6	0.1	0.3	2.5			0.6	0.0	0.6	0.3	
Delay (s)		10.4	8.2	8.8	13.2			13.0	11.1	12.6	12.0	
Level of Service		B	A	A	B			B	B	B	B	
Approach Delay (s)		9.9			12.6			12.5			12.3	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			1.00			1.00	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1794			1926			1854			2100	
Flt Permitted		0.94			0.89			0.98			0.99	
Satd. Flow (perm)		1708			1747			1817			2090	
Volume (vph)	15	45	15	20	30	5	15	440	10	5	440	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	17	22	33	6	17	489	11	6	489	17
RTOR Reduction (vph)	0	11	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	73	0	0	61	0	0	516	0	0	510	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		342			349			704			810	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			c0.28			0.24	
v/c Ratio		0.21			0.17			0.73			0.63	
Uniform Delay, d1		26.7			26.5			21.0			19.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.1			6.6			3.7	
Delay (s)		28.2			27.6			27.6			23.5	
Level of Service		C			C			C			C	
Approach Delay (s)		28.2			27.6			27.6			23.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1875		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1875		
Volume (vph)	15	370	30	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	411	33	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	449	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	492		
v/s Ratio Prot	0.01	c0.24		
v/s Ratio Perm				
v/c Ratio	0.03	0.91		
Uniform Delay, d1	22.0	28.6		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	23.9		
Delay (s)	22.1	52.5		
Level of Service	C	D		
Approach Delay (s)		51.4		
Approach LOS		D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786	1583		1817	1583	1770	3535		1770	3506	
Flt Permitted		0.72	1.00		0.84	1.00	0.12	1.00		0.21	1.00	
Satd. Flow (perm)		1339	1583		1563	1583	229	3535		400	3506	
Volume (vph)	60	10	320	30	30	35	210	1150	10	35	1060	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	11	356	33	33	39	233	1278	11	39	1178	78
RTOR Reduction (vph)	0	0	221	0	0	32	0	1	0	0	6	0
Lane Group Flow (vph)	0	78	135	0	66	7	233	1288	0	39	1250	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		11.0	11.0		11.0	11.0	41.8	41.8		28.5	28.5	
Effective Green, g (s)		11.0	11.0		11.0	11.0	41.8	41.8		28.5	28.5	
Actuated g/C Ratio		0.18	0.18		0.18	0.18	0.69	0.69		0.47	0.47	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		242	286		283	286	393	2430		188	1643	
v/s Ratio Prot							0.09	c0.36			c0.36	
v/s Ratio Perm		0.06	c0.09		0.04	0.00	0.32			0.10		
v/c Ratio		0.32	0.47		0.23	0.02	0.59	0.53		0.21	0.76	
Uniform Delay, d1		21.7	22.3		21.3	20.5	8.7	4.7		9.5	13.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	1.2		0.4	0.0	2.4	0.2		0.6	2.1	
Delay (s)		22.4	23.5		21.7	20.5	11.1	4.9		10.1	15.5	
Level of Service		C	C		C	C	B	A		B	B	
Approach Delay (s)		23.3			21.3			5.8			15.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1747	1478	1770	1909		1652	3298		1652	3296	
Flt Permitted		0.78	1.00	0.71	1.00		0.16	1.00		0.95	1.00	
Satd. Flow (perm)		1400	1478	1323	1909		272	3298		1652	3296	
Volume (vph)	40	25	350	30	20	35	315	1415	15	45	1275	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	28	389	33	22	39	350	1572	17	50	1417	22
RTOR Reduction (vph)	0	0	344	0	35	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	72	45	33	26	0	350	1588	0	50	1438	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.9	7.9	7.9	7.9		41.4	41.4		3.7	28.3	
Effective Green, g (s)		7.9	7.9	7.9	7.9		42.4	42.4		3.7	29.3	
Actuated g/C Ratio		0.12	0.12	0.12	0.12		0.62	0.62		0.05	0.43	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		161	170	153	220		507	2041		89	1410	
v/s Ratio Prot					0.01		0.17	c0.48		0.03	c0.44	
v/s Ratio Perm		c0.05	0.03	0.02			0.26					
v/c Ratio		0.45	0.26	0.22	0.12		0.69	0.78		0.56	1.02	
Uniform Delay, d1		28.3	27.6	27.5	27.2		18.2	9.6		31.6	19.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.3	0.3	0.1		7.5	3.0		4.8	29.1	
Delay (s)		29.0	28.0	27.7	27.3		25.7	12.6		36.4	48.7	
Level of Service		C	C	C	C		C	B		D	D	
Approach Delay (s)		28.1			27.4			15.0			48.2	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	68.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.5%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1700			3539			3538	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1700			3539			3538	
Volume (vph)	0	0	0	1355	135	0	0	890	0	0	1955	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1506	150	0	0	989	0	0	2172	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	807	849	0	0	989	0	0	2178	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				34.0	34.0			54.0			54.0	
Effective Green, g (s)				36.0	36.0			56.0			56.0	
Actuated g/C Ratio				0.36	0.36			0.56			0.56	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				605	612			1982			1981	
v/s Ratio Prot								0.28			c0.62	
v/s Ratio Perm				0.48	0.50							
v/c Ratio				1.33	1.39			0.50			1.10	
Uniform Delay, d1				32.0	32.0			13.4			22.0	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				161.3	184.2			0.2			53.2	
Delay (s)				193.3	216.2			13.6			75.2	
Level of Service				F	F			B			E	
Approach Delay (s)		0.0			205.1			13.6			75.2	
Approach LOS		A			F			B			E	

Intersection Summary			
HCM Average Control Delay	107.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	150	70	45	90	15	150	290	55	55	285	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	167	78	50	100	17	167	322	61	61	317	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	267	167	550	406
Volume Left (vph)	22	50	167	61
Volume Right (vph)	78	17	61	28
Hadj (s)	-0.12	0.03	0.03	0.02
Departure Headway (s)	7.4	8.0	6.7	6.9
Degree Utilization, x	0.55	0.37	1.02	0.78
Capacity (veh/h)	453	401	550	509
Control Delay (s)	19.2	15.7	70.8	30.0
Approach Delay (s)	19.2	15.7	70.8	30.0
Approach LOS	C	C	F	D

Intersection Summary			
Delay	42.3		
HCM Level of Service	E		
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	140	5	545	235	0	865
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	156	6	606	261	0	961
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.78					
vC, conflicting volume	1697	736			867	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1892	736			867	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	99			100	
cM capacity (veh/h)	60	419			777	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	161	867	961
Volume Left	156	0	0
Volume Right	6	261	0
cSH	62	1700	777
Volume to Capacity	2.60	0.51	0.00
Queue Length 95th (ft)	404	0	0
Control Delay (s)	869.6	0.0	0.0
Lane LOS	F		
Approach Delay (s)	869.6	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	70.4		
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	0	50	10	0	10	25	1185	5	5	1125	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	0	56	11	0	11	28	1317	6	6	1250	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	2008	2661	647	2067	2681	661	1294			1322		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2009	2721	647	2073	2742	540	1294			1261		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	62	100	87	53	100	98	95			99		
cM capacity (veh/h)	30	18	414	23	17	446	531			502		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	67	22	686	664	631	669
Volume Left	11	11	28	0	6	0
Volume Right	56	11	0	6	0	44
cSH	131	45	531	1700	502	1700
Volume to Capacity	0.51	0.50	0.05	0.39	0.01	0.39
Queue Length 95th (ft)	60	45	4	0	1	0
Control Delay (s)	58.2	148.2	1.5	0.0	0.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	58.2	148.2	0.8		0.2	
Approach LOS	F	F				

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	125	20	35	145	35	65
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	22	39	161	39	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			161		389	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			161		389	150
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	92
cM capacity (veh/h)			1418		598	896

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	161	200	111
Volume Left	0	39	39
Volume Right	22	0	72
cSH	1700	1418	763
Volume to Capacity	0.09	0.03	0.15
Queue Length 95th (ft)	0	2	13
Control Delay (s)	0.0	1.7	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	10.5
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2008 NO BUILD*
Analysis Time Period	*PM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *LOCUST/LEDGE*	North/South Street: *ROUTE 7*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*805*	*260*	*25*	*965*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*894*	*288*	*27*	*1072*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*55*	*0*	*20*	*75*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*61*	*0*	*22*	*83*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*27*			*61*			*105*
C (m) (vph)		*587*			*450*			*98*
v/c		*0.05*			*0.14*			*1.07*
95% queue length		*0.14*			*0.47*			*6.73*
Control Delay		*11.4*			*14.3*			*191.9*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*14.3*			*191.9*		
Approach LOS	--	--	*B*			*F*		

Version 4.1d

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2008 NO BUILD*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*75*	*730*	*0*	*0*	*1005*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*83*	*811*	*0*	*0*	*1116*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*145*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*161*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*83*				*161*			
C (m) (vph)	*626*				*39*			
v/c	*0.13*				*4.13*			
95% queue length	*0.46*				*18.51*			
Control Delay	*11.6*				*1618*			
LOS	*B*				*F*			
Approach Delay	--	--	*1618*					
Approach LOS	--	--	*F*					

NO-BUILD ALTERNATIVE

2028 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.98	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1835	1583		1820	1583		3482		1770	1857	
Flt Permitted		0.88	1.00		0.82	1.00		0.83		0.95	1.00	
Satd. Flow (perm)		1633	1583		1531	1583		2914		1770	1857	
Volume (vph)	15	35	25	45	50	150	35	280	25	220	690	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	39	28	50	56	167	39	311	28	244	767	17
RTOR Reduction (vph)	0	0	24	0	0	99	0	0	0	0	0	0
Lane Group Flow (vph)	0	56	4	0	106	68	0	378	0	244	784	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		7.2	7.2		7.2	20.0		13.9		12.8	31.7	
Effective Green, g (s)		8.2	8.2		8.2	22.0		14.9		13.8	32.7	
Actuated g/C Ratio		0.15	0.15		0.15	0.41		0.28		0.26	0.61	
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)		249	242		234	649		809		455	1131	
v/s Ratio Prot			0.00			0.04				0.14	c0.42	
v/s Ratio Perm		0.03			c0.07			0.13				
v/c Ratio		0.22	0.02		0.45	0.11		0.47		0.54	0.69	
Uniform Delay, d1		20.0	19.3		20.7	9.8		16.1		17.2	7.1	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		1.4	0.1		0.4		1.2	1.9	
Delay (s)		20.4	19.4		22.1	9.9		16.5		18.4	9.0	
Level of Service		C	B		C	A		B		B	A	
Approach Delay (s)		20.1			14.6			16.5			11.2	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.6%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.88			0.99			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.98	
Satd. Flow (prot)	1770	1863			1636			1848			1820	
Flt Permitted	0.63	1.00			0.98			0.97			0.78	
Satd. Flow (perm)	1175	1863			1614			1788			1445	
Volume (vph)	20	35	0	10	5	110	10	210	10	280	455	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	39	0	11	6	122	11	233	11	311	506	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	39	0	0	139	0	0	255	0	0	850	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.4	22.4			22.4			50.7			50.7	
Effective Green, g (s)	23.4	23.4			23.4			51.7			51.7	
Actuated g/C Ratio	0.28	0.28			0.28			0.62			0.62	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	331	525			454			1112			899	
v/s Ratio Prot		0.02										
v/s Ratio Perm	0.02				c0.09			0.14			c0.59	
v/c Ratio	0.07	0.07			0.31			0.23			0.95	
Uniform Delay, d1	21.9	21.9			23.5			6.9			14.4	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	0.3			1.7			0.1			18.1	
Delay (s)	22.2	22.2			25.2			7.0			32.5	
Level of Service	C	C			C			A			C	
Approach Delay (s)		22.2			25.2			7.0			32.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

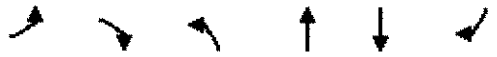
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.90			0.98			0.99	
Flt Protected		0.99			0.99			0.99			0.96	
Satd. Flow (prot)		1732			1611			1742			1719	
Flt Permitted		0.94			0.96			0.94			0.75	
Satd. Flow (perm)		1648			1560			1652			1336	
Volume (vph)	5	15	5	40	35	205	5	20	5	365	70	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	17	6	44	39	228	6	22	6	406	78	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	29	0	0	311	0	0	34	0	0	512	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		20.9			20.9			29.4			28.4	
Effective Green, g (s)		20.9			20.9			29.4			29.4	
Actuated g/C Ratio		0.36			0.36			0.50			0.50	
Clearance Time (s)		4.0			4.0			4.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		591			559			833			674	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.20			0.02			c0.38	
v/c Ratio		0.05			0.56			0.04			0.76	
Uniform Delay, d1		12.2			15.0			7.3			11.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			4.0			0.0			4.9	
Delay (s)		12.4			18.9			7.3			16.5	
Level of Service		B			B			A			B	
Approach Delay (s)		12.4			18.9			7.3			16.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.96			1.00	0.85		1.00	0.85		0.98	
Flt Protected		0.99			1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1772			1861	1583		1802	1583		1801	
Flt Permitted		0.94			0.99	1.00		0.63	1.00		0.88	
Satd. Flow (perm)		1668			1847	1583		1177	1583		1601	
Volume (vph)	40	220	125	5	285	65	260	125	10	45	160	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	244	139	6	317	72	289	139	11	50	178	50
RTOR Reduction (vph)	0	0	0	0	0	48	0	0	6	0	0	0
Lane Group Flow (vph)	0	427	0	0	323	24	0	428	5	0	278	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		19.5			19.5	19.5		26.9	26.9		26.9	
Effective Green, g (s)		20.5			20.5	20.5		27.9	27.9		27.9	
Actuated g/C Ratio		0.33			0.33	0.33		0.46	0.46		0.46	
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)		559			619	530		537	722		730	
v/s Ratio Prot												
v/s Ratio Perm		c0.26			0.17	0.02		c0.36	0.00		0.17	
v/c Ratio		0.76			0.52	0.05		0.80	0.01		0.38	
Uniform Delay, d1		18.2			16.4	13.7		14.2	9.1		11.0	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		6.1			0.8	0.0		8.1	0.0		0.3	
Delay (s)		24.3			17.2	13.8		22.3	9.1		11.3	
Level of Service		C			B	B		C	A		B	
Approach Delay (s)		24.3			16.6			22.0			11.3	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.32	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	580	1863	1801	1583
Volume (vph)	55	120	155	590	645	235
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	133	172	656	717	261
RTOR Reduction (vph)	0	111	0	0	0	73
Lane Group Flow (vph)	61	22	172	656	717	188
Turn Type		Prot	Perm			Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	11.1	11.1	50.9	50.9	50.9	50.9
Effective Green, g (s)	12.1	12.1	51.9	51.9	51.9	51.9
Actuated g/C Ratio	0.17	0.17	0.72	0.72	0.72	0.72
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)	288	266	418	1343	1298	1141
v/s Ratio Prot	c0.04	0.01		0.35	c0.40	
v/s Ratio Perm			0.30			0.12
v/c Ratio	0.21	0.08	0.41	0.49	0.55	0.16
Uniform Delay, d1	25.8	25.3	4.0	4.3	4.7	3.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	3.0	1.3	1.7	0.3
Delay (s)	26.2	25.4	7.0	5.6	6.4	3.5
Level of Service	C	C	A	A	A	A
Approach Delay (s)	25.7			5.9	5.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	8.0
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		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.99			0.92			1.00		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1926			1816			1980		1711	1759	
Flt Permitted		0.49			0.99			0.98		0.24	1.00	
Satd. Flow (perm)		971			1802			1940		432	1759	
Volume (vph)	65	70	10	10	130	235	15	555	10	145	490	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	78	11	11	144	261	17	617	11	161	544	100
RTOR Reduction (vph)	0	4	0	0	83	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	157	0	0	333	0	0	644	0	161	637	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.0			16.0			25.8		36.8	36.8	
Effective Green, g (s)		17.0			17.0			26.8		37.8	37.8	
Actuated g/C Ratio		0.26			0.26			0.41		0.58	0.58	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		252			467			793		385	1014	
v/s Ratio Prot										0.04	c0.36	
v/s Ratio Perm		0.16			c0.18			c0.33		0.20		
v/c Ratio		0.62			0.71			0.81		0.42	0.63	
Uniform Delay, d1		21.5			22.1			17.2		9.6	9.2	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.8			5.1			6.4		0.7	1.2	
Delay (s)		26.2			27.2			23.5		10.3	10.5	
Level of Service		C			C			C		B	B	
Approach Delay (s)		26.2			27.2			23.5			10.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	110	95	25	105	25	10	355	45	25	260	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	122	106	28	117	28	11	394	50	28	289	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	239	172	456	322
Volume Left (vph)	11	28	11	28
Volume Right (vph)	106	28	50	6
Hadj (s)	-0.22	-0.03	-0.03	0.04
Departure Headway (s)	6.5	6.9	6.0	6.3
Degree Utilization, x	0.43	0.33	0.76	0.56
Capacity (veh/h)	481	438	579	527
Control Delay (s)	14.4	13.3	25.1	17.1
Approach Delay (s)	14.4	13.3	25.1	17.1
Approach LOS	B	B	D	C

Intersection Summary			
Delay	19.1		
HCM Level of Service	C		
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	55	365	75	100	10	105	395	55	5	365	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	61	406	83	111	11	117	439	61	6	406	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	472	206	617	417
Volume Left (vph)	6	83	117	6
Volume Right (vph)	406	11	61	6
Hadj (s)	-0.48	0.08	0.01	0.03
Departure Headway (s)	7.9	9.6	8.4	8.4
Degree Utilization, x	1.03	0.55	1.43	0.97
Capacity (veh/h)	460	363	442	417
Control Delay (s)	79.0	23.5	230.4	66.8
Approach Delay (s)	79.0	23.5	230.4	66.8
Approach LOS	F	C	F	F

Intersection Summary			
Delay	123.9		
HCM Level of Service	F		
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	75	160	35	55	160	250	15	175	20	155	295	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	178	39	61	178	278	17	194	22	172	328	67

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	300	517	233	567
Volume Left (vph)	83	61	17	172
Volume Right (vph)	39	278	22	67
Hadj (s)	0.01	-0.26	-0.01	0.02
Departure Headway (s)	8.5	7.6	8.8	7.9
Degree Utilization, x	0.70	1.09	0.57	1.24
Capacity (veh/h)	414	471	392	454
Control Delay (s)	29.3	95.1	22.8	150.8
Approach Delay (s)	29.3	95.1	22.8	150.8
Approach LOS	D	F	C	F

Intersection Summary			
Delay	92.0		
HCM Level of Service	F		
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	15	50	5	45	20	630	20	45	805	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	17	56	6	50	22	700	22	50	894	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1806	1764	897	1772	1756	711	900			722		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1806	1764	897	1772	1756	711	900			722		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	93	95	0	93	88	97			94		
cM capacity (veh/h)	48	77	338	54	78	433	755			880		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	111	744	950
Volume Left	6	56	22	50
Volume Right	17	50	22	6
cSH	117	92	755	880
Volume to Capacity	0.24	1.21	0.03	0.06
Queue Length 95th (ft)	22	194	2	5
Control Delay (s)	45.1	244.2	0.8	1.6
Lane LOS	E	F	A	A
Approach Delay (s)	45.1	244.2	0.8	1.6
Approach LOS	E	F		

Intersection Summary			
Average Delay	16.6		
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	85	75	575	65	45	795
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	83	639	72	50	883
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			600			
pX, platoon unblocked	0.83	0.83			0.83	
vC, conflicting volume	1658	675			711	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1792	609			652	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	80			94	
cM capacity (veh/h)	69	411			776	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	178	711	933
Volume Left	94	0	50
Volume Right	83	72	0
cSH	113	1700	776
Volume to Capacity	1.57	0.42	0.06
Queue Length 95th (ft)	329	0	5
Control Delay (s)	362.7	0.0	1.8
Lane LOS	F		A
Approach Delay (s)	362.7	0.0	1.8
Approach LOS	F		

Intersection Summary			
Average Delay	36.3		
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	45	70	685	45	55	685
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	78	761	50	61	761
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.80					
vC, conflicting volume	1669	786			811	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1837	786			811	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	19	80			93	
cM capacity (veh/h)	62	392			815	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	128	811	822
Volume Left	50	0	61
Volume Right	78	50	0
cSH	127	1700	815
Volume to Capacity	1.01	0.48	0.07
Queue Length 95th (ft)	175	0	6
Control Delay (s)	149.3	0.0	2.0
Lane LOS	F		A
Approach Delay (s)	149.3	0.0	2.0
Approach LOS	F		

Intersection Summary			
Average Delay	11.7		
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	25	185	735	700	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	28	206	817	778	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.76	0.86	0.86			
vC, conflicting volume	2022	794	811			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2061	760	780			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	92	71			
cM capacity (veh/h)	33	348	718			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	33	1022	811
Volume Left	6	206	0
Volume Right	28	0	33
cSH	134	718	1700
Volume to Capacity	0.25	0.29	0.48
Queue Length 95th (ft)	23	30	0
Control Delay (s)	40.6	7.7	0.0
Lane LOS	E	A	
Approach Delay (s)	40.6	7.7	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.97			0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1839		1770	1786			1921			1748	
Flt Permitted	0.26	1.00		0.31	1.00			0.97			0.90	
Satd. Flow (perm)	464	1839		573	1786			1861			1591	
Volume (vph)	45	380	35	25	430	25	25	270	85	45	190	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	422	39	28	478	28	28	300	94	50	211	50
RTOR Reduction (vph)	0	5	0	0	3	0	0	8	0	0	5	0
Lane Group Flow (vph)	50	456	0	28	503	0	0	414	0	0	306	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	19.8	19.8		19.8	19.8			20.9			20.9	
Effective Green, g (s)	20.8	20.8		20.8	20.8			21.9			21.9	
Actuated g/C Ratio	0.37	0.37		0.37	0.37			0.39			0.39	
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)	174	689		215	669			734			628	
v/s Ratio Prot		0.25			c0.28							
v/s Ratio Perm	0.11			0.05				c0.22			0.19	
v/c Ratio	0.29	0.66		0.13	0.75			0.56			0.49	
Uniform Delay, d1	12.2	14.4		11.4	15.1			13.1			12.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	2.4		0.3	4.8			1.0			0.6	
Delay (s)	13.1	16.8		11.7	19.9			14.1			13.2	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		16.5			19.4			14.1			13.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.1%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.96				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1869		1652	1733				
Flt Permitted	0.31	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	607	1739			1869		1652	1733				
Volume (vph)	20	390	0	0	445	60	110	210	70	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	433	0	0	494	67	122	233	78	0	0	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	11	0	0	0	0
Lane Group Flow (vph)	22	433	0	0	554	0	122	300	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	21.0	21.0			21.0		13.3	13.3				
Effective Green, g (s)	22.0	22.0			22.0		14.3	14.3				
Actuated g/C Ratio	0.47	0.47			0.47		0.31	0.31				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	286	819			880		506	531				
v/s Ratio Prot		0.25			c0.30			c0.17				
v/s Ratio Perm	0.04						0.07					
v/c Ratio	0.08	0.53			0.63		0.24	0.56				
Uniform Delay, d1	6.8	8.7			9.3		12.1	13.6				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.6			1.4		0.2	1.4				
Delay (s)	6.9	9.3			10.7		12.4	15.0				
Level of Service	A	A			B		B	B				
Approach Delay (s)		9.2			10.7			14.2			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	46.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1666		1711	1801	1531		1643		1652	1739	1583
Flt Permitted	0.41	1.00		0.51	1.00	1.00		0.91		0.71	1.00	1.00
Satd. Flow (perm)	670	1666		924	1801	1531		1506		1240	1739	1583
Volume (vph)	30	235	10	40	310	120	10	45	5	100	340	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	261	11	44	344	133	11	50	6	111	378	56
RTOR Reduction (vph)	0	2	0	0	0	89	0	3	0	0	0	33
Lane Group Flow (vph)	33	270	0	44	344	44	0	64	0	111	378	23
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	15.7	15.7		16.1	16.1	16.1		11.3		20.7	20.7	20.7
Effective Green, g (s)	16.7	16.7		17.1	17.1	17.1		12.3		21.7	21.7	21.7
Actuated g/C Ratio	0.32	0.32		0.33	0.33	0.33		0.24		0.42	0.42	0.42
Clearance Time (s)	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
Lane Grp Cap (vph)	215	535		304	592	503		356		560	726	661
v/s Ratio Prot		0.16			c0.19					0.02	c0.22	
v/s Ratio Perm	0.05			0.05		0.03		0.04		0.06		0.01
v/c Ratio	0.15	0.50		0.14	0.58	0.09		0.18		0.20	0.52	0.04
Uniform Delay, d1	12.6	14.3		12.3	14.5	12.1		15.8		9.7	11.3	9.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.8		0.2	1.5	0.1		0.2		0.2	0.7	0.0
Delay (s)	12.9	15.1		12.5	15.9	12.1		16.1		9.9	12.0	9.0
Level of Service	B	B		B	B	B		B		A	B	A
Approach Delay (s)		14.8			14.7			16.1			11.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1736	1478	1486	1519			1826	1794	1593	1836	
Flt Permitted		0.99	1.00	0.59	1.00			0.85	1.00	0.55	1.00	
Satd. Flow (perm)		1720	1478	923	1519			1587	1794	916	1836	
Volume (vph)	5	220	45	20	270	65	95	145	25	20	50	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	244	50	22	300	72	106	161	28	22	56	6
RTOR Reduction (vph)	0	0	28	0	11	0	0	0	10	0	3	0
Lane Group Flow (vph)	0	250	22	22	361	0	0	267	18	22	59	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		15.6	15.6	15.6	15.6			13.2	13.2	13.2	13.2	
Effective Green, g (s)		16.6	16.6	16.6	16.6			14.2	14.2	14.2	14.2	
Actuated g/C Ratio		0.38	0.38	0.38	0.38			0.32	0.32	0.32	0.32	
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)		652	560	350	576			515	582	297	595	
v/s Ratio Prot					c0.24						0.03	
v/s Ratio Perm		0.15	0.01	0.02				c0.17	0.01	0.02		
v/c Ratio		0.38	0.04	0.06	0.63			0.52	0.03	0.07	0.10	
Uniform Delay, d1		9.9	8.6	8.7	11.1			12.0	10.1	10.2	10.3	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.0	0.1	2.1			0.9	0.0	0.1	0.1	
Delay (s)		10.3	8.6	8.7	13.2			12.9	10.1	10.4	10.4	
Level of Service		B	A	A	B			B	B	B	B	
Approach Delay (s)		10.0			13.0			12.6			10.4	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.94			0.98			1.00			1.00	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1733			1923			1856			2104	
Flt Permitted		0.97			0.96			0.98			0.99	
Satd. Flow (perm)		1689			1858			1823			2085	
Volume (vph)	10	30	35	5	20	5	20	465	5	5	270	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	33	39	6	22	6	22	517	6	6	300	6
RTOR Reduction (vph)	0	31	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	52	0	0	34	0	0	544	0	0	311	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		338			372			706			808	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.30			0.15	
v/c Ratio		0.15			0.09			0.77			0.39	
Uniform Delay, d1		26.4			26.1			21.4			17.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			0.5			8.0			1.4	
Delay (s)		27.4			26.6			29.4			19.0	
Level of Service		C			C			C			B	
Approach Delay (s)		27.4			26.6			29.4			19.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.98		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1866		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1866		
Volume (vph)	5	320	45	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	356	50	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	411	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	490		
v/s Ratio Prot	0.00	c0.22		
v/s Ratio Perm				
v/c Ratio	0.01	0.84		
Uniform Delay, d1	21.8	27.9		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	15.8		
Delay (s)	21.9	43.7		
Level of Service	C	D		
Approach Delay (s)		43.3		
Approach LOS		D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1823	1583	1770	3536		1770	3512	
Flt Permitted		0.77	1.00		0.84	1.00	0.14	1.00		0.25	1.00	
Satd. Flow (perm)		1426	1583		1573	1583	263	3536		465	3512	
Volume (vph)	60	25	175	15	20	20	280	1020	5	20	925	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	28	194	17	22	22	311	1133	6	22	1028	56
RTOR Reduction (vph)	0	0	167	0	0	19	0	0	0	0	5	0
Lane Group Flow (vph)	0	95	27	0	39	3	311	1139	0	22	1079	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		7.5	7.5		7.5	7.5	39.1	39.1		25.3	25.3	
Effective Green, g (s)		7.5	7.5		7.5	7.5	39.1	39.1		25.3	25.3	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.72	0.72		0.46	0.46	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		196	217		216	217	459	2532		215	1627	
v/s Ratio Prot							c0.12	0.32			0.31	
v/s Ratio Perm		c0.07	0.02		0.02	0.00	c0.36			0.05		
v/c Ratio		0.48	0.12		0.18	0.01	0.68	0.45		0.10	0.66	
Uniform Delay, d1		21.8	20.7		20.8	20.4	8.6	3.2		8.3	11.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.9	0.3		0.4	0.0	3.9	0.1		0.2	1.0	
Delay (s)		23.6	20.9		21.2	20.4	12.5	3.4		8.5	12.4	
Level of Service		C	C		C	C	B	A		A	B	
Approach Delay (s)		21.8			20.9			5.3			12.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	54.6	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3300		1652	3271	
Flt Permitted		0.75	1.00	0.71	1.00		0.14	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		245	3300		1652	3271	
Volume (vph)	50	10	310	15	5	10	380	1370	10	10	1015	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	344	17	6	11	422	1522	11	11	1128	78
RTOR Reduction (vph)	0	0	306	0	10	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	67	38	17	7	0	422	1533	0	11	1200	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		535	2208		21	1367	
v/s Ratio Prot					0.00		c0.21	0.46		0.01	c0.37	
v/s Ratio Perm		c0.05	0.03	0.01			0.32					
v/c Ratio		0.45	0.23	0.11	0.03		0.79	0.69		0.52	0.88	
Uniform Delay, d1		29.1	28.4	28.0	27.8		16.6	7.2		34.4	18.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.3	0.1	0.0		11.2	1.8		10.4	8.2	
Delay (s)		29.9	28.7	28.2	27.8		27.8	9.0		44.8	27.0	
Level of Service		C	C	C	C		C	A		D	C	
Approach Delay (s)		28.9			28.0			13.1			27.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1290	50	0	0	965	0	0	1410	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1433	56	0	0	1072	0	0	1567	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	725	764	0	0	1072	0	0	1567	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			30.0			30.0	
Effective Green, g (s)				30.0	30.0			32.0			32.0	
Actuated g/C Ratio				0.43	0.43			0.46			0.46	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				720	725			1618			1618	
v/s Ratio Prot								0.30			c0.44	
v/s Ratio Perm				0.43	0.45							
v/c Ratio				1.01	1.05			0.66			0.97	
Uniform Delay, d1				20.0	20.0			14.8			18.5	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				35.3	48.5			1.0			15.4	
Delay (s)				55.3	68.5			15.8			33.9	
Level of Service				E	E			B			C	
Approach Delay (s)		0.0			62.0			15.8			33.9	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.7%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	65	45	15	130	10	50	370	65	5	165	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	72	50	17	144	11	56	411	72	6	183	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	128	172	539	200
Volume Left (vph)	6	17	56	6
Volume Right (vph)	50	11	72	11
Hadj (s)	-0.19	0.01	-0.03	0.01
Departure Headway (s)	6.1	6.2	5.2	5.7
Degree Utilization, x	0.22	0.30	0.77	0.32
Capacity (veh/h)	521	523	678	569
Control Delay (s)	10.8	11.7	23.4	11.3
Approach Delay (s)	10.8	11.7	23.4	11.3
Approach LOS	B	B	C	B

Intersection Summary			
Delay	17.6		
HCM Level of Service	C		
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	65	5	535	265	5	695
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	6	594	294	6	772
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.91					
vC, conflicting volume	1525	742			889	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1574	742			889	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	34	99			99	
cM capacity (veh/h)	110	416			762	

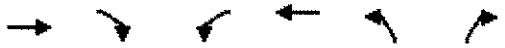
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	78	889	778
Volume Left	72	0	6
Volume Right	6	294	0
cSH	116	1700	762
Volume to Capacity	0.67	0.52	0.01
Queue Length 95th (ft)	88	0	1
Control Delay (s)	84.0	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	84.0	0.0	0.2
Approach LOS	F		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	40	0	85	10	0	10	40	1045	5	5	930	90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	44	0	94	11	0	11	44	1161	6	6	1033	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1775	2350	567	1875	2397	583	1133			1167		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1775	2350	567	1875	2397	583	1133			1167		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	7	100	80	66	100	98	93			99		
cM capacity (veh/h)	48	33	467	33	30	455	612			595		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	139	22	625	586	522	617
Volume Left	44	11	44	0	6	0
Volume Right	94	11	0	6	0	100
cSH	123	61	612	1700	595	1700
Volume to Capacity	1.13	0.36	0.07	0.34	0.01	0.36
Queue Length 95th (ft)	207	33	6	0	1	0
Control Delay (s)	189.1	93.8	2.0	0.0	0.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	189.1	93.8	1.0		0.1	
Approach LOS	F	F				

Intersection Summary			
Average Delay	11.8		
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	215	35	135	85	10	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	239	39	150	94	11	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			278		653	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			278		653	258
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		97	94
cM capacity (veh/h)			1285		382	780

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	278	244	61
Volume Left	0	150	11
Volume Right	39	0	50
cSH	1700	1285	656
Volume to Capacity	0.16	0.12	0.09
Queue Length 95th (ft)	0	10	8
Control Delay (s)	0.0	5.4	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	5.4	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2028 NO BUILD*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*810*	*265*	*10*	*735*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*900*	*294*	*11*	*816*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*70*	*0*	*10*	*85*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*77*	*0*	*11*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*11*			*77*			*105*
C (m) (vph)		*580*			*446*			*210*
v/c		*0.02*			*0.17*			*0.50*
95% queue length		*0.06*			*0.62*			*2.52*
Control Delay		*11.3*			*14.7*			*38.1*
LOS		*B*			*B*			*E*
Approach Delay	--	--	*14.7*			*38.1*		
Approach LOS	--	--	*B*			*E*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2028 NO BUILD*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*75*	*735*	*0*	*0*	*760*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*83*	*816*	*0*	*0*	*844*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*210*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*233*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*83*				*233*			
C (m) (vph)	*792*				*61*			
v/c	*0.10*				*3.82*			
95% queue length	*0.35*				*25.00*			
Control Delay	*10.1*				*1408*			
LOS	*B*				*F*			
Approach Delay	--	--	*1408*					
Approach LOS	--	--	*F*					

NO-BUILD ALTERNATIVE

2028 PM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1830	1583		1809	1583		3453		1770	1838	
Flt Permitted		0.85	1.00		0.77	1.00		0.87		0.95	1.00	
Satd. Flow (perm)		1585	1583		1439	1583		3012		1770	1838	
Volume (vph)	25	45	45	110	75	415	60	425	70	300	300	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	50	50	122	83	461	67	472	78	333	333	33
RTOR Reduction (vph)	0	0	39	0	0	170	0	0	0	0	0	0
Lane Group Flow (vph)	0	78	11	0	205	291	0	617	0	333	366	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		14.3	14.3		14.3	30.0		18.5		15.7	39.2	
Effective Green, g (s)		15.3	15.3		15.3	32.0		19.5		16.7	40.2	
Actuated g/C Ratio		0.22	0.22		0.22	0.47		0.29		0.24	0.59	
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)		355	355		322	742		860		433	1082	
v/s Ratio Prot			0.01			0.18				c0.19	0.20	
v/s Ratio Perm		0.05			c0.14			c0.20				
v/c Ratio		0.22	0.03		0.64	0.39		0.72		0.77	0.34	
Uniform Delay, d1		21.6	20.7		24.0	11.8		21.9		24.0	7.2	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		4.1	0.3		2.9		8.0	0.2	
Delay (s)		21.9	20.7		28.1	12.2		24.8		32.0	7.4	
Level of Service		C	C		C	B		C		C	A	
Approach Delay (s)		21.5			17.1			24.8			19.1	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.0%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.90			0.99			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1863			1673			1844			1818	
Flt Permitted	0.66	1.00			0.99			0.99			0.74	
Satd. Flow (perm)	1224	1863			1658			1833			1372	
Volume (vph)	50	50	0	10	35	125	5	380	30	125	295	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	56	0	11	39	139	6	422	33	139	328	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	56	56	0	0	189	0	0	461	0	0	506	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.6	22.6			22.6			24.4			24.4	
Effective Green, g (s)	23.6	23.6			23.6			25.4			25.4	
Actuated g/C Ratio	0.41	0.41			0.41			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	507	771			686			817			611	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.05				c0.11			0.25			c0.37	
v/c Ratio	0.11	0.07			0.28			0.56			0.83	
Uniform Delay, d1	10.3	10.1			11.0			11.7			13.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	0.2			1.0			0.9			9.0	
Delay (s)	10.7	10.3			12.0			12.6			22.9	
Level of Service	B	B			B			B			C	
Approach Delay (s)		10.5			12.0			12.6			22.9	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.88			0.95			0.99	
Flt Protected		0.98			1.00			1.00			0.96	
Satd. Flow (prot)		1746			1578			1720			1712	
Flt Permitted		0.76			1.00			1.00			0.70	
Satd. Flow (perm)		1356			1574			1720			1248	
Volume (vph)	45	45	5	5	25	320	0	50	25	265	25	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	50	6	6	28	356	0	56	28	294	28	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	106	0	0	390	0	0	84	0	0	344	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		21.6			21.6			33.7			32.7	
Effective Green, g (s)		21.6			21.6			33.7			33.7	
Actuated g/C Ratio		0.34			0.34			0.53			0.53	
Clearance Time (s)		4.0			4.0			4.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		463			537			916			664	
v/s Ratio Prot								0.05				
v/s Ratio Perm		0.08			c0.25						c0.28	
v/c Ratio		0.23			0.73			0.09			0.52	
Uniform Delay, d1		14.9			18.3			7.3			9.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.2			8.3			0.0			0.7	
Delay (s)		16.0			26.6			7.3			10.2	
Level of Service		B			C			A			B	
Approach Delay (s)		16.0			26.6			7.3			10.2	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↰	↱		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.97			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1803			1845	1583		1806	1583		1820	
Flt Permitted		0.99			0.87	1.00		0.67	1.00		0.85	
Satd. Flow (perm)		1780			1629	1583		1239	1583		1561	
Volume (vph)	10	260	80	70	295	35	150	90	70	65	150	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	289	89	78	328	39	167	100	78	72	167	17
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	50	0	0	0
Lane Group Flow (vph)	0	389	0	0	406	15	0	267	28	0	256	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		19.4			19.4	19.4		17.2	17.2		17.2	
Effective Green, g (s)		20.4			20.4	20.4		18.2	18.2		18.2	
Actuated g/C Ratio		0.40			0.40	0.40		0.35	0.35		0.35	
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)		706			647	628		439	561		553	
v/s Ratio Prot												
v/s Ratio Perm		0.22			c0.25	0.01		c0.22	0.02		0.16	
v/c Ratio		0.55			0.63	0.02		0.61	0.05		0.46	
Uniform Delay, d1		12.0			12.4	9.4		13.7	10.9		12.8	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.9			1.9	0.0		2.4	0.0		0.6	
Delay (s)		12.9			14.4	9.5		16.1	10.9		13.4	
Level of Service		B			B	A		B	B		B	
Approach Delay (s)		12.9			13.9			14.9			13.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.10	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	176	1863	1801	1583
Volume (vph)	180	325	145	565	945	100
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	200	361	161	628	1050	111
RTOR Reduction (vph)	0	93	0	0	0	40
Lane Group Flow (vph)	200	268	161	628	1050	71
Turn Type		Prot	Perm			Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	14.0	14.0	40.0	40.0	40.0	40.0
Effective Green, g (s)	15.0	15.0	41.0	41.0	41.0	41.0
Actuated g/C Ratio	0.23	0.23	0.64	0.64	0.64	0.64
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)	401	371	113	1193	1154	1014
v/s Ratio Prot	0.12	c0.17		0.34	0.58	
v/s Ratio Perm			c0.92			0.04
v/c Ratio	0.50	0.72	1.42	0.53	0.91	0.07
Uniform Delay, d1	21.2	22.6	11.5	6.2	9.9	4.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	6.8	234.7	1.7	12.1	0.1
Delay (s)	22.2	29.4	246.2	7.9	22.0	4.5
Level of Service	C	C	F	A	C	A
Approach Delay (s)	26.9			56.5	20.4	
Approach LOS	C			E	C	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.7%	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		↕			↕			↕		↰	↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.92			0.99		1.00	0.99	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1913			1827			1966		1711	1774	
Flt Permitted		0.55			0.96			0.41		0.27	1.00	
Satd. Flow (perm)		1067			1758			813		494	1774	
Volume (vph)	125	155	45	30	140	225	20	380	25	300	815	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	139	172	50	33	156	250	22	422	28	333	906	100
RTOR Reduction (vph)	0	7	0	0	58	0	0	3	0	0	5	0
Lane Group Flow (vph)	0	354	0	0	381	0	0	469	0	333	1001	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.0			25.0			25.1		38.1	38.1	
Effective Green, g (s)		26.0			26.0			26.1		39.1	39.1	
Actuated g/C Ratio		0.34			0.34			0.34		0.51	0.51	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		365			601			279		398	913	
v/s Ratio Prot										0.10	c0.56	
v/s Ratio Perm		c0.33			0.22			c0.58		0.33		
v/c Ratio		0.97			0.63			1.68		0.84	1.10	
Uniform Delay, d1		24.6			21.0			24.9		14.1	18.4	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		38.5			2.2			322.2		14.1	59.7	
Delay (s)		63.1			23.2			347.2		28.2	78.2	
Level of Service		E			C			F		C	E	
Approach Delay (s)		63.1			23.2			347.2			65.8	
Approach LOS		E			C			F			E	

Intersection Summary			
HCM Average Control Delay	109.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	124.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	130	185	40	160	25	35	285	25	30	265	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	144	206	44	178	28	39	317	28	33	294	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	356	250	383	339
Volume Left (vph)	6	44	39	33
Volume Right (vph)	206	28	28	11
Hadj (s)	-0.31	0.00	0.01	0.03
Departure Headway (s)	7.1	7.8	7.3	7.4
Degree Utilization, x	0.71	0.54	0.77	0.70
Capacity (veh/h)	466	401	467	448
Control Delay (s)	25.5	19.6	31.1	26.0
Approach Delay (s)	25.5	19.6	31.1	26.0
Approach LOS	D	C	D	D

Intersection Summary			
Delay	26.1		
HCM Level of Service	D		
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	145	215	65	100	120	320	220	60	60	420	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	161	239	72	111	133	356	244	67	67	467	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	406	317	667	539
Volume Left (vph)	6	72	356	67
Volume Right (vph)	239	133	67	6
Hadj (s)	-0.32	-0.17	0.08	0.05
Departure Headway (s)	8.8	9.4	9.2	9.2
Degree Utilization, x	0.99	0.82	1.70	1.37
Capacity (veh/h)	406	379	395	402
Control Delay (s)	72.3	43.8	350.3	209.2
Approach Delay (s)	72.3	43.8	350.3	209.2
Approach LOS	F	E	F	F

Intersection Summary			
Delay	202.0		
HCM Level of Service	F		
Intersection Capacity Utilization	109.3%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	105	140	60	45	185	155	15	175	35	255	400	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	117	156	67	50	206	172	17	194	39	283	444	67

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	339	428	250	794
Volume Left (vph)	117	50	17	283
Volume Right (vph)	67	172	39	67
Hadj (s)	-0.02	-0.18	-0.05	0.05
Departure Headway (s)	8.4	8.0	8.9	8.3
Degree Utilization, x	0.79	0.95	0.62	1.82
Capacity (veh/h)	413	428	385	439
Control Delay (s)	37.0	58.3	25.1	398.0
Approach Delay (s)	37.0	58.3	25.1	398.0
Approach LOS	E	F	D	F

Intersection Summary			
Delay	198.7		
HCM Level of Service	F		
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	25	25	5	35	15	650	50	50	975	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	28	28	6	39	17	722	56	56	1083	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2025	2011	1089	2014	1989	750	1094			778		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2025	2011	1089	2014	1989	750	1094			778		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	67	90	89	17	90	91	97			93		
cM capacity (veh/h)	33	54	262	33	55	411	638			839		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	44	72	794	1150
Volume Left	11	28	17	56
Volume Right	28	39	56	11
cSH	82	70	638	839
Volume to Capacity	0.54	1.03	0.03	0.07
Queue Length 95th (ft)	59	133	2	5
Control Delay (s)	92.1	215.6	0.7	2.2
Lane LOS	F	F	A	A
Approach Delay (s)	92.1	215.6	0.7	2.2
Approach LOS	F	F		

Intersection Summary			
Average Delay	11.0		
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	45	40	640	110	45	995
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	44	711	122	50	1106
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			600			
pX, platoon unblocked	0.80	0.80			0.80	
vC, conflicting volume	1978	772			833	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2227	714			791	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	87			92	
cM capacity (veh/h)	35	344			661	

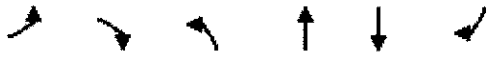
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	833	1156
Volume Left	50	0	50
Volume Right	44	122	0
cSH	60	1700	661
Volume to Capacity	1.56	0.49	0.08
Queue Length 95th (ft)	211	0	6
Control Delay (s)	432.6	0.0	2.7
Lane LOS	F		A
Approach Delay (s)	432.6	0.0	2.7
Approach LOS	F		

Intersection Summary			
Average Delay	21.1		
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	20	40	680	40	75	1150
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	44	756	44	83	1278
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.42					
vC, conflicting volume	2222	778			800	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3886	778			800	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	89			90	
cM capacity (veh/h)	1	396			823	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	67	800	1361
Volume Left	22	0	83
Volume Right	44	44	0
cSH	4	1700	823
Volume to Capacity	15.13	0.47	0.10
Queue Length 95th (ft)	Err	0	8
Control Delay (s)	Err	0.0	4.4
Lane LOS	F		A
Approach Delay (s)	Err	0.0	4.4
Approach LOS	F		

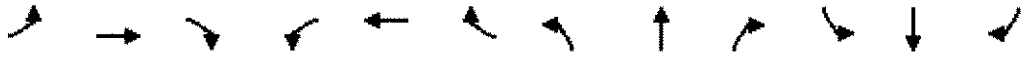
Intersection Summary			
Average Delay	301.9		
Intersection Capacity Utilization	116.5%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	10	80	15	685	1155	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	89	17	761	1283	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.54	0.46	0.46			
vC, conflicting volume	2083	1289	1294			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2565	1625	1637			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	22	0	91			
cM capacity (veh/h)	14	58	183			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	100	778	1294
Volume Left	11	17	0
Volume Right	89	0	11
cSH	43	183	1700
Volume to Capacity	2.30	0.09	0.76
Queue Length 95th (ft)	265	7	0
Control Delay (s)	796.5	4.9	0.0
Lane LOS	F	A	
Approach Delay (s)	796.5	4.9	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	38.4		
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			1.00			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1840		1770	1784			1964			1759	
Flt Permitted	0.27	1.00		0.33	1.00			0.90			0.94	
Satd. Flow (perm)	477	1840		606	1784			1778			1667	
Volume (vph)	60	405	35	60	465	30	50	225	5	35	230	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	450	39	67	517	33	56	250	6	39	256	44
RTOR Reduction (vph)	0	4	0	0	3	0	0	1	0	0	5	0
Lane Group Flow (vph)	67	485	0	67	547	0	0	311	0	0	334	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	20.5	20.5		20.5	20.5			16.1			16.1	
Effective Green, g (s)	21.5	21.5		21.5	21.5			17.1			17.1	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.33			0.33	
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)	200	773		254	749			594			557	
v/s Ratio Prot		0.26			c0.31							
v/s Ratio Perm	0.14			0.11				0.18			c0.20	
v/c Ratio	0.34	0.63		0.26	0.73			0.52			0.60	
Uniform Delay, d1	10.0	11.7		9.7	12.4			13.8			14.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.6		0.6	3.7			0.8			1.8	
Delay (s)	11.0	13.3		10.2	16.1			14.6			16.0	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		13.0			15.5			14.6			16.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1881		1652	1780				
Flt Permitted	0.25	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	498	1739			1881		1652	1780				
Volume (vph)	30	480	0	0	505	40	70	305	25	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	533	0	0	561	44	78	339	28	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	3	0	0	0	0
Lane Group Flow (vph)	33	533	0	0	601	0	78	364	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	21.5	21.5			21.5		15.4	15.4				
Effective Green, g (s)	22.5	22.5			22.5		16.4	16.4				
Actuated g/C Ratio	0.46	0.46			0.46		0.33	0.33				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	227	794			858		550	592				
v/s Ratio Prot		0.31			c0.32			c0.20				
v/s Ratio Perm	0.07						0.05					
v/c Ratio	0.15	0.67			0.70		0.14	0.62				
Uniform Delay, d1	7.8	10.5			10.7		11.5	13.8				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.3	2.2			2.6		0.1	1.9				
Delay (s)	8.1	12.7			13.3		11.6	15.7				
Level of Service	A	B			B		B	B				
Approach Delay (s)		12.5			13.3			15.0			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1645		1711	1801	1531		1616		1652	1739	1583
Flt Permitted	0.35	1.00		0.41	1.00	1.00		0.92		0.73	1.00	1.00
Satd. Flow (perm)	569	1645		735	1801	1531		1487		1272	1739	1583
Volume (vph)	110	280	40	70	360	155	5	70	25	220	320	85
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	311	44	78	400	172	6	78	28	244	356	94
RTOR Reduction (vph)	0	6	0	0	0	113	0	11	0	0	0	55
Lane Group Flow (vph)	122	349	0	78	400	59	0	101	0	244	356	39
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	17.8	17.8		17.6	17.6	17.6		8.9		21.6	21.6	21.6
Effective Green, g (s)	18.8	18.8		18.6	18.6	18.6		9.9		22.6	22.6	22.6
Actuated g/C Ratio	0.34	0.34		0.34	0.34	0.34		0.18		0.41	0.41	0.41
Clearance Time (s)	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
Lane Grp Cap (vph)	196	567		251	615	523		270		588	721	656
v/s Ratio Prot		0.21			c0.22					0.07	c0.20	
v/s Ratio Perm	0.21			0.11		0.04		0.07		0.11		0.02
v/c Ratio	0.62	0.62		0.31	0.65	0.11		0.37		0.41	0.49	0.06
Uniform Delay, d1	14.9	14.8		13.2	15.2	12.3		19.6		12.6	11.7	9.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	2.0		0.7	2.5	0.1		0.9		0.5	0.5	0.0
Delay (s)	20.9	16.8		13.9	17.7	12.4		20.4		13.1	12.3	9.6
Level of Service	C	B		B	B	B		C		B	B	A
Approach Delay (s)		17.9			15.8			20.4			12.2	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	54.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1734	1478	1486	1525			1825	1794	1593	1841	
Flt Permitted		0.97	1.00	0.49	1.00			0.82	1.00	0.63	1.00	
Satd. Flow (perm)		1688	1478	767	1525			1525	1794	1060	1841	
Volume (vph)	15	290	85	55	320	65	75	105	50	100	120	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	322	94	61	356	72	83	117	56	111	133	11
RTOR Reduction (vph)	0	0	37	0	9	0	0	0	29	0	3	0
Lane Group Flow (vph)	0	339	57	61	419	0	0	200	27	111	141	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		17.5	17.5	17.5	17.5			12.8	12.8	12.8	12.8	
Effective Green, g (s)		18.5	18.5	18.5	18.5			13.8	13.8	13.8	13.8	
Actuated g/C Ratio		0.41	0.41	0.41	0.41			0.30	0.30	0.30	0.30	
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)		689	604	313	623			465	547	323	561	
v/s Ratio Prot					c0.27						0.08	
v/s Ratio Perm		0.20	0.04	0.08				c0.13	0.02	0.10		
v/c Ratio		0.49	0.09	0.19	0.67			0.43	0.05	0.34	0.25	
Uniform Delay, d1		9.9	8.2	8.6	10.9			12.6	11.1	12.2	11.9	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6	0.1	0.3	2.9			0.6	0.0	0.6	0.2	
Delay (s)		10.5	8.3	8.9	13.8			13.2	11.2	12.9	12.1	
Level of Service		B	A	A	B			B	B	B	B	
Approach Delay (s)		10.0			13.2			12.8			12.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.99			1.00			1.00	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1750			1926			1854			2101	
Flt Permitted		0.96			0.88			0.98			0.99	
Satd. Flow (perm)		1685			1732			1818			2090	
Volume (vph)	15	45	40	20	30	5	15	445	10	5	455	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	44	22	33	6	17	494	11	6	506	17
RTOR Reduction (vph)	0	30	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	81	0	0	61	0	0	521	0	0	528	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		337			346			704			810	
v/s Ratio Prot												
v/s Ratio Perm		c0.05			0.04			c0.29			0.25	
v/c Ratio		0.24			0.18			0.74			0.65	
Uniform Delay, d1		26.9			26.5			21.0			20.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.7			1.1			6.9			4.1	
Delay (s)		28.6			27.6			27.9			24.1	
Level of Service		C			C			C			C	
Approach Delay (s)		28.6			27.6			27.9			24.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1876		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1876		
Volume (vph)	15	375	30	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	417	33	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	455	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	492		
v/s Ratio Prot	0.01	c0.24		
v/s Ratio Perm				
v/c Ratio	0.03	0.93		
Uniform Delay, d1	22.0	28.7		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	25.7		
Delay (s)	22.1	54.4		
Level of Service	C	D		
Approach Delay (s)		53.3		
Approach LOS		D		

Intersection Summary

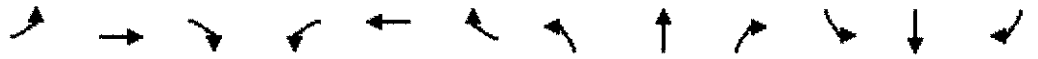
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583		1821	1583	1770	3535		1770	3507	
Flt Permitted		0.74	1.00		0.85	1.00	0.12	1.00		0.21	1.00	
Satd. Flow (perm)		1384	1583		1588	1583	220	3535		387	3507	
Volume (vph)	55	15	345	30	35	35	240	1180	10	35	1085	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	17	383	33	39	39	267	1311	11	39	1206	78
RTOR Reduction (vph)	0	0	218	0	0	32	0	1	0	0	6	0
Lane Group Flow (vph)	0	78	165	0	72	7	267	1321	0	39	1278	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		11.7	11.7		11.7	11.7	43.5	43.5		29.8	29.8	
Effective Green, g (s)		11.7	11.7		11.7	11.7	43.5	43.5		29.8	29.8	
Actuated g/C Ratio		0.19	0.19		0.19	0.19	0.69	0.69		0.47	0.47	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		256	293		294	293	389	2433		182	1654	
v/s Ratio Prot							c0.11	0.37			c0.36	
v/s Ratio Perm		0.06	c0.10		0.05	0.00	0.37			0.10		
v/c Ratio		0.30	0.56		0.24	0.02	0.69	0.54		0.21	0.77	
Uniform Delay, d1		22.2	23.4		22.0	21.1	11.8	4.9		9.8	13.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	2.5		0.4	0.0	5.0	0.2		0.6	2.3	
Delay (s)		22.9	25.9		22.4	21.1	16.8	5.2		10.4	16.2	
Level of Service		C	C		C	C	B	A		B	B	
Approach Delay (s)		25.4			22.0			7.1			16.0	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1747	1478	1770	1909		1652	3298		1652	3296	
Flt Permitted		0.78	1.00	0.71	1.00		0.16	1.00		0.95	1.00	
Satd. Flow (perm)		1400	1478	1323	1909		272	3298		1652	3296	
Volume (vph)	40	25	375	30	20	35	355	1480	15	45	1325	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	28	417	33	22	39	394	1644	17	50	1472	22
RTOR Reduction (vph)	0	0	369	0	35	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	72	48	33	26	0	394	1660	0	50	1493	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.9	7.9	7.9	7.9		41.4	41.4		3.7	28.3	
Effective Green, g (s)		7.9	7.9	7.9	7.9		42.4	42.4		3.7	29.3	
Actuated g/C Ratio		0.12	0.12	0.12	0.12		0.62	0.62		0.05	0.43	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		161	170	153	220		507	2041		89	1410	
v/s Ratio Prot					0.01		0.19	c0.50		0.03	c0.45	
v/s Ratio Perm		c0.05	0.03	0.02			0.29					
v/c Ratio		0.45	0.28	0.22	0.12		0.78	0.81		0.56	1.06	
Uniform Delay, d1		28.3	27.7	27.5	27.2		19.6	10.0		31.6	19.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.3	0.3	0.1		11.1	3.7		4.8	41.2	
Delay (s)		29.0	28.0	27.7	27.3		30.8	13.7		36.4	60.8	
Level of Service		C	C	C	C		C	B		D	E	
Approach Delay (s)		28.2			27.4			17.0			60.0	
Approach LOS		C			C			B			E	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	68.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1699			3539			3538	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1699			3539			3538	
Volume (vph)	0	0	0	1485	140	0	0	890	0	0	2040	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1650	156	0	0	989	0	0	2267	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	880	926	0	0	989	0	0	2273	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				34.0	34.0			54.0			54.0	
Effective Green, g (s)				36.0	36.0			56.0			56.0	
Actuated g/C Ratio				0.36	0.36			0.56			0.56	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				605	612			1982			1981	
v/s Ratio Prot								0.28			c0.64	
v/s Ratio Perm				0.52	0.55							
v/c Ratio				1.45	1.51			0.50			1.15	
Uniform Delay, d1				32.0	32.0			13.4			22.0	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				213.7	239.3			0.2			72.8	
Delay (s)				245.7	271.3			13.6			94.8	
Level of Service				F	F			B			F	
Approach Delay (s)		0.0			258.8			13.6			94.8	
Approach LOS		A			F			B			F	

Intersection Summary			
HCM Average Control Delay	137.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	155	70	55	95	15	155	295	50	55	290	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	172	78	61	106	17	172	328	56	61	322	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	272	183	556	411
Volume Left (vph)	22	61	172	61
Volume Right (vph)	78	17	56	28
Hadj (s)	-0.12	0.05	0.04	0.02
Departure Headway (s)	7.6	8.1	6.9	7.0
Degree Utilization, x	0.57	0.41	1.06	0.80
Capacity (veh/h)	444	398	521	498
Control Delay (s)	20.2	16.7	81.9	32.9
Approach Delay (s)	20.2	16.7	81.9	32.9
Approach LOS	C	C	F	D

Intersection Summary			
Delay	47.5		
HCM Level of Service	E		
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	145	5	550	265	15	885
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	161	6	611	294	17	983
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.77					
vC, conflicting volume	1775	758			906	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2008	758			906	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	99			98	
cM capacity (veh/h)	49	407			751	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	167	906	1000
Volume Left	161	0	17
Volume Right	6	294	0
cSH	50	1700	751
Volume to Capacity	3.31	0.53	0.02
Queue Length 95th (ft)	Err	0	2
Control Delay (s)	Err	0.0	0.7
Lane LOS	F		A
Approach Delay (s)	Err	0.0	0.7
Approach LOS	F		

Intersection Summary			
Average Delay	804.5		
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	0	50	10	0	10	35	1200	5	5	1150	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	0	56	11	0	11	39	1333	6	6	1278	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	2067	2728	661	2119	2747	669	1322			1339		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2075	2818	661	2134	2840	504	1322			1257		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	56	100	86	44	100	98	92			99		
cM capacity (veh/h)	25	14	405	20	14	456	518			489		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	67	22	706	672	644	683
Volume Left	11	11	39	0	6	0
Volume Right	56	11	0	6	0	44
cSH	115	38	518	1700	489	1700
Volume to Capacity	0.58	0.58	0.08	0.40	0.01	0.40
Queue Length 95th (ft)	71	51	6	0	1	0
Control Delay (s)	72.5	187.2	2.1	0.0	0.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	72.5	187.2	1.1		0.2	
Approach LOS	F	F				

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	155	25	40	170	35	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	172	28	44	189	39	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			200		464	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200		464	186
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	91
cM capacity (veh/h)			1372		538	856

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	200	233	117
Volume Left	0	44	39
Volume Right	28	0	78
cSH	1700	1372	715
Volume to Capacity	0.12	0.03	0.16
Queue Length 95th (ft)	0	3	15
Control Delay (s)	0.0	1.7	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	11.0
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2028 NO BUILD*
Analysis Time Period	*PM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *LOCUST/LEDGE*	North/South Street: *ROUTE 7*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*845*	*230*	*30*	*985*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*938*	*255*	*33*	*1094*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*55*	*0*	*25*	*75*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*61*	*0*	*27*	*83*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*33*			*61*			*110*
C (m) (vph)		*581*			*447*			*82*
v/c		*0.06*			*0.14*			*1.34*
95% queue length		*0.18*			*0.47*			*8.41*
Control Delay		*11.6*			*14.3*			*305.7*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*14.3*			*305.7*		
Approach LOS	--	--	*B*			*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*2/18/2005*	Analysis Year	*2028 NO BUILD*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*765*	*0*	*0*	*1030*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*850*	*0*	*0*	*1144*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*165*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*183*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*88*				*183*			
C (m) (vph)	*611*				*33*			
v/c	*0.14*				*5.55*			
95% queue length	*0.50*				*21.89*			
Control Delay	*11.9*				*2285*			
LOS	*B*				*F*			
Approach Delay	--	--	*2285*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 1

2008 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1823	1583		1817	1583		3499		1770	1858	
Flt Permitted		0.84	1.00		0.82	1.00		0.73		0.95	1.00	
Satd. Flow (perm)		1559	1583		1531	1583		2551		1770	1858	
Volume (vph)	15	20	45	50	50	85	60	510	25	100	915	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	22	50	56	56	94	67	567	28	111	1017	17
RTOR Reduction (vph)	0	0	44	0	0	73	0	0	0	0	0	0
Lane Group Flow (vph)	0	39	6	0	112	21	0	662	0	111	1034	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		13.9	13.9		13.9	26.5		83.3		12.6	100.9	
Effective Green, g (s)		14.9	14.9		14.9	28.5		84.3		13.6	101.9	
Actuated g/C Ratio		0.11	0.11		0.11	0.22		0.65		0.10	0.78	
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)		179	181		175	347		1654		185	1456	
v/s Ratio Prot			0.00			0.01				0.06	c0.56	
v/s Ratio Perm		0.03			c0.07			0.26				
v/c Ratio		0.22	0.03		0.64	0.06		0.40		0.60	0.71	
Uniform Delay, d1		52.3	51.1		55.0	40.1		10.8		55.6	6.9	
Progression Factor		1.00	1.00		1.00	1.00		0.53		1.00	1.00	
Incremental Delay, d2		0.6	0.1		7.7	0.1		0.6		5.2	3.0	
Delay (s)		52.9	51.2		62.7	40.2		6.4		60.8	9.8	
Level of Service		D	D		E	D		A		E	A	
Approach Delay (s)		51.9			52.5			6.4			14.8	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.85			0.90		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583			1661		1770	1860		1770	1855	
Flt Permitted	0.36	1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	668	1583			1606		1770	1860		1770	1855	
Volume (vph)	20	0	10	20	15	110	10	465	5	105	880	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	0	11	22	17	122	11	517	6	117	978	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	11	0	0	161	0	11	523	0	117	1006	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	16.5	16.5			16.5		1.6	79.3		13.0	90.7	
Effective Green, g (s)	17.5	17.5			17.5		2.6	80.3		14.0	91.7	
Actuated g/C Ratio	0.13	0.13			0.13		0.02	0.62		0.11	0.71	
Clearance Time (s)	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	
Lane Grp Cap (vph)	90	213			216		35	1149		191	1308	
v/s Ratio Prot		0.01					0.01	0.28		c0.07	c0.54	
v/s Ratio Perm	0.03				c0.10							
v/c Ratio	0.24	0.05			0.75		0.31	0.46		0.61	0.77	
Uniform Delay, d1	50.3	49.0			54.1		62.8	13.2		55.4	12.3	
Progression Factor	1.00	1.00			1.00		0.96	0.74		1.14	0.76	
Incremental Delay, d2	1.4	0.1			13.1		4.6	1.2		4.3	3.3	
Delay (s)	51.8	49.1			67.2		65.0	11.0		67.2	12.7	
Level of Service	D	D			E		E	B		E	B	
Approach Delay (s)		50.9			67.2			12.1			18.3	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

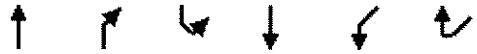
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1725			1717		1711	1782		1711	1784	
Flt Permitted		0.66			0.80		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1176			1410		1711	1782		1711	1784	
Volume (vph)	55	20	5	65	40	20	5	405	30	80	780	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	22	6	72	44	22	6	450	33	89	867	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	89	0	0	138	0	6	483	0	89	923	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		16.3			16.3		1.6	81.1		11.4	90.9	
Effective Green, g (s)		17.3			17.3		2.6	82.1		12.4	91.9	
Actuated g/C Ratio		0.13			0.13		0.02	0.63		0.10	0.71	
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)		156			188		34	1125		163	1261	
v/s Ratio Prot							0.00	0.27		c0.05	c0.52	
v/s Ratio Perm		0.08			c0.10							
v/c Ratio		0.57			0.73		0.18	0.43		0.55	0.73	
Uniform Delay, d1		52.9			54.1		62.6	12.1		56.1	11.6	
Progression Factor		1.00			1.00		0.74	1.53		1.26	0.13	
Incremental Delay, d2		5.0			13.8		2.3	1.1		2.5	2.6	
Delay (s)		57.8			67.9		48.4	19.6		73.3	4.1	
Level of Service		E			E		D	B		E	A	
Approach Delay (s)		57.8			67.9			19.9			10.1	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	68.1%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		1.00			1.00	0.85		1.00	0.85		0.98	
Flt Protected		0.99			1.00	1.00		0.99	1.00		0.99	
Satd. Flow (prot)		1837			1859	1583		1842	1583		1797	
Flt Permitted		0.89			0.99	1.00		0.90	1.00		0.89	
Satd. Flow (perm)		1649			1838	1583		1679	1583		1610	
Volume (vph)	45	160	5	10	255	45	40	140	10	45	130	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	178	6	11	283	50	44	156	11	50	144	44
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	8	0	0	0
Lane Group Flow (vph)	0	234	0	0	294	21	0	200	3	0	238	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		16.3			16.3	16.3		9.4	9.4		9.4	
Effective Green, g (s)		17.3			17.3	17.3		10.4	10.4		10.4	
Actuated g/C Ratio		0.43			0.43	0.43		0.26	0.26		0.26	
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)		704			785	676		431	406		413	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.16	0.01		0.12	0.00		c0.15	
v/c Ratio		0.33			0.37	0.03		0.46	0.01		0.58	
Uniform Delay, d1		7.7			7.9	6.7		12.7	11.2		13.1	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.3			0.3	0.0		0.8	0.0		1.9	
Delay (s)		8.0			8.2	6.8		13.5	11.2		15.1	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		8.0			8.0			13.4			15.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	1863	1583	1770	1863	1769	
Flt Permitted	1.00	1.00	0.40	1.00	0.95	
Satd. Flow (perm)	1863	1583	748	1863	1769	
Volume (vph)	465	265	15	845	290	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	517	294	17	939	322	11
RTOR Reduction (vph)	0	31	0	0	1	0
Lane Group Flow (vph)	517	263	17	939	332	0
Turn Type	Prot		Perm			
Protected Phases	2	8		6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	86.5	113.8	86.5	86.5	27.3	
Effective Green, g (s)	87.5	115.8	87.5	87.5	28.3	
Actuated g/C Ratio	0.67	0.89	0.67	0.67	0.22	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1254	1459	503	1254	385	
v/s Ratio Prot	0.28	0.04		c0.50	c0.19	
v/s Ratio Perm		0.13	0.02			
v/c Ratio	0.41	0.18	0.03	0.75	0.86	
Uniform Delay, d1	9.6	0.9	7.1	14.0	49.0	
Progression Factor	1.00	1.00	0.39	0.51	1.00	
Incremental Delay, d2	1.0	0.1	0.1	3.0	17.7	
Delay (s)	10.6	1.0	2.8	10.1	66.7	
Level of Service	B	A	A	B	E	
Approach Delay (s)	7.1			10.0	66.7	
Approach LOS	A			B	E	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.40	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	729	1863	1801	1583
Volume (vph)	265	15	15	460	395	740
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	294	17	17	511	439	822
RTOR Reduction (vph)	0	11	0	0	0	0
Lane Group Flow (vph)	294	6	17	511	439	822
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	38.8	38.8	65.0	65.0	65.0	65.0
Effective Green, g (s)	39.8	39.8	66.0	66.0	66.0	66.0
Actuated g/C Ratio	0.33	0.33	0.55	0.55	0.55	0.55
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)	567	525	401	1025	991	871
v/s Ratio Prot	c0.17	0.00		0.27	0.24	
v/s Ratio Perm			0.02			c0.52
v/c Ratio	0.52	0.01	0.04	0.50	0.44	0.94
Uniform Delay, d1	32.4	26.9	12.4	16.7	16.1	25.3
Progression Factor	0.72	0.75	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0	0.2	1.7	0.3	18.2
Delay (s)	26.5	20.3	12.6	18.5	16.4	43.5
Level of Service	C	C	B	B	B	D
Approach Delay (s)	26.1			18.3	34.0	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	62.5%	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		↔			↔			↔		↰	↳	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		1.00			0.92			0.99		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1948			1816			1973		1711	1764	
Flt Permitted		0.66			0.98			0.99		0.51	1.00	
Satd. Flow (perm)		1305			1779			1954		912	1764	
Volume (vph)	30	45	0	10	55	105	10	245	10	115	190	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	50	0	11	61	117	11	272	11	128	211	33
RTOR Reduction (vph)	0	0	0	0	93	0	0	2	0	0	5	0
Lane Group Flow (vph)	0	83	0	0	96	0	0	292	0	128	239	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.5			7.5			28.6		39.1	39.1	
Effective Green, g (s)		8.5			8.5			29.6		40.1	40.1	
Actuated g/C Ratio		0.14			0.14			0.50		0.68	0.68	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		187			255			974		703	1191	
v/s Ratio Prot										0.02	c0.14	
v/s Ratio Perm		c0.06			0.05			c0.15		0.10		
v/c Ratio		0.44			0.38			0.30		0.18	0.20	
Uniform Delay, d1		23.3			23.1			8.8		4.0	3.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.7			0.9			0.2		0.1	0.1	
Delay (s)		25.0			24.0			9.0		4.1	3.7	
Level of Service		C			C			A		A	A	
Approach Delay (s)		25.0			24.0			9.0			3.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	60	95	660	95	225	220
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	106	733	106	250	244
RTOR Reduction (vph)	0	62	0	0	0	47
Lane Group Flow (vph)	67	44	733	106	250	197
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	7.9	47.9	50.9	63.8	40.0	95.9
Effective Green, g (s)	8.9	49.9	51.9	64.8	41.0	96.9
Actuated g/C Ratio	0.07	0.42	0.43	0.54	0.34	0.81
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	138	658	766	1006	605	1278
v/s Ratio Prot	c0.04	0.02	c0.41	0.06	c0.14	0.12
v/s Ratio Perm		0.00				
v/c Ratio	0.49	0.07	0.96	0.11	0.41	0.15
Uniform Delay, d1	53.4	21.1	33.0	13.5	30.3	2.5
Progression Factor	1.00	1.00	0.24	0.15	1.08	5.15
Incremental Delay, d2	2.7	0.0	11.2	0.0	1.9	0.1
Delay (s)	56.0	21.1	19.1	2.0	34.6	13.1
Level of Service	E	C	B	A	C	B
Approach Delay (s)	34.6			16.9	24.0	
Approach LOS	C			B	C	

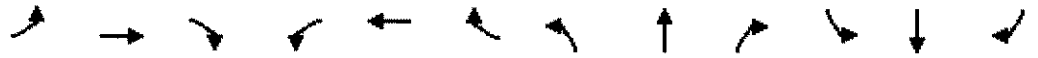
Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.98		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1648			1786		1770	1826		1770	1857	
Flt Permitted		0.94			0.88		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1570			1591		1770	1826		1770	1857	
Volume (vph)	5	0	20	30	40	15	80	425	65	10	730	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	22	33	44	17	89	472	72	11	811	17
RTOR Reduction (vph)	0	20	0	0	6	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	8	0	0	88	0	89	541	0	11	828	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		10.7			10.7		8.7	84.9		3.2	79.4	
Effective Green, g (s)		11.7			11.7		9.7	85.9		4.2	80.4	
Actuated g/C Ratio		0.10			0.10		0.08	0.72		0.04	0.67	
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)		153			155		143	1307		62	1244	
v/s Ratio Prot							c0.05	0.30		0.01	c0.45	
v/s Ratio Perm		0.01			c0.06							
v/c Ratio		0.05			0.57		0.62	0.41		0.18	0.67	
Uniform Delay, d1		49.1			51.7		53.4	6.9		56.2	11.8	
Progression Factor		1.00			1.03		0.88	1.44		1.21	0.13	
Incremental Delay, d2		0.1			4.6		7.5	0.9		0.7	1.4	
Delay (s)		49.3			57.7		54.5	10.8		68.8	3.0	
Level of Service		D			E		D	B		E	A	
Approach Delay (s)		49.3			57.7			16.9			3.8	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780			1808		1770	1860		1770	1848	
Flt Permitted		0.77			0.90		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1401			1646		1770	1860		1770	1848	
Volume (vph)	45	65	30	15	65	15	65	510	5	5	735	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	72	33	17	72	17	72	567	6	6	817	44
RTOR Reduction (vph)	0	9	0	0	6	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	146	0	0	100	0	72	573	0	6	860	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		15.1			15.1		7.8	82.1		1.6	75.9	
Effective Green, g (s)		16.1			16.1		8.8	83.1		2.6	76.9	
Actuated g/C Ratio		0.13			0.13		0.07	0.69		0.02	0.64	
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)		188			221		130	1288		38	1184	
v/s Ratio Prot							c0.04	0.31		0.00	c0.47	
v/s Ratio Perm		c0.10			0.06							
v/c Ratio		0.78			0.45		0.55	0.44		0.16	0.73	
Uniform Delay, d1		50.2			47.9		53.7	8.2		57.6	14.5	
Progression Factor		1.00			1.00		0.85	1.36		1.26	0.23	
Incremental Delay, d2		18.2			1.5		4.5	1.0		1.5	3.1	
Delay (s)		68.4			49.4		50.0	12.2		73.9	6.4	
Level of Service		E			D		D	B		E	A	
Approach Delay (s)		68.4			49.4			16.4			6.9	
Approach LOS		E			D			B			A	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1827	1583		1766		1770	1843		1770	1848	
Flt Permitted		0.87	1.00		0.48		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1619	1583		876		1770	1843		1770	1848	
Volume (vph)	50	80	105	40	5	5	135	525	40	5	735	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	89	117	44	6	6	150	583	44	6	817	44
RTOR Reduction (vph)	0	0	93	0	4	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	145	24	0	52	0	150	626	0	6	860	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		13.7	13.7		13.7		14.3	83.5		1.6	70.8	
Effective Green, g (s)		14.7	14.7		14.7		15.3	84.5		2.6	71.8	
Actuated g/C Ratio		0.12	0.12		0.12		0.13	0.70		0.02	0.60	
Clearance Time (s)		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	
Lane Grp Cap (vph)		198	194		107		226	1298		38	1106	
v/s Ratio Prot							c0.08	0.34		0.00	c0.47	
v/s Ratio Perm		c0.09	0.02		0.06							
v/c Ratio		0.73	0.12		0.49		0.66	0.48		0.16	0.78	
Uniform Delay, d1		50.8	46.9		49.2		49.9	7.9		57.6	18.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.28	0.19	
Incremental Delay, d2		13.1	0.3		3.5		7.1	1.3		1.4	3.8	
Delay (s)		63.8	47.2		52.7		57.0	9.2		75.0	7.3	
Level of Service		E	D		D		E	A		E	A	
Approach Delay (s)		56.4			52.7			18.5			7.8	
Approach LOS		E			D			B			A	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	68.0%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	100	65	25	100	25	10	160	40	5	135	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	111	72	28	111	28	11	178	44	6	150	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	189	167	233	161
Volume Left (vph)	6	28	11	6
Volume Right (vph)	72	28	44	6
Hadj (s)	-0.19	-0.03	-0.07	0.02
Departure Headway (s)	5.0	5.2	5.0	5.2
Degree Utilization, x	0.26	0.24	0.32	0.23
Capacity (veh/h)	658	634	662	634
Control Delay (s)	9.7	9.8	10.4	9.7
Approach Delay (s)	9.7	9.8	10.4	9.7
Approach LOS	A	A	B	A

Intersection Summary				
Delay			9.9	
HCM Level of Service			A	
Intersection Capacity Utilization		41.0%	ICU Level of Service	A
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	40	50	55	125	5	55	200	45	10	210	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	44	56	61	139	6	61	222	50	11	233	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	106	206	333	250
Volume Left (vph)	6	61	61	11
Volume Right (vph)	56	6	50	6
Hadj (s)	-0.27	0.08	-0.02	0.03
Departure Headway (s)	5.6	5.7	5.2	5.4
Degree Utilization, x	0.16	0.33	0.48	0.37
Capacity (veh/h)	555	569	649	626
Control Delay (s)	9.7	11.5	12.9	11.5
Approach Delay (s)	9.7	11.5	12.9	11.5
Approach LOS	A	B	B	B

Intersection Summary			
Delay	11.8		
HCM Level of Service	B		
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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	110	0	10	15	115	5	55	10	140	20	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	122	0	11	17	128	6	61	11	156	22	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	156	78	200
Volume Left (vph)	22	11	6	156
Volume Right (vph)	0	128	11	22
Hadj (s)	0.06	-0.44	-0.04	0.12
Departure Headway (s)	4.9	4.3	4.8	4.8
Degree Utilization, x	0.19	0.19	0.10	0.27
Capacity (veh/h)	690	767	682	697
Control Delay (s)	9.0	8.4	8.4	9.6
Approach Delay (s)	9.0	8.4	8.4	9.6
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.0		
HCM Level of Service	A		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	15	45	5	40	20	750	30	20	1130	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	17	50	6	44	22	833	33	22	1256	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1247	
pX, platoon unblocked	0.85	0.85	0.85	0.85	0.85		0.85					
vC, conflicting volume	2244	2214	1258	2217	2200	850	1261			867		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2470	2434	1305	2438	2418	850	1309			867		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	53	78	90	0	78	88	95			97		
cM capacity (veh/h)	12	25	166	13	25	360	448			777		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	100	889	1283
Volume Left	6	50	22	22
Volume Right	17	44	33	6
cSH	35	24	448	777
Volume to Capacity	0.79	4.23	0.05	0.03
Queue Length 95th (ft)	70	Err	4	2
Control Delay (s)	257.1	Err	1.7	1.2
Lane LOS	F	F	A	A
Approach Delay (s)	257.1	Err	1.7	1.2
Approach LOS	F	F		

Intersection Summary			
Average Delay	439.2		
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	45	90	695	30	70	1090
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	100	772	33	78	1211
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.82	0.82			0.82	
vC, conflicting volume	2156	789			806	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2409	743			763	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	71			89	
cM capacity (veh/h)	26	341			697	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	150	806	1289
Volume Left	50	0	78
Volume Right	100	33	0
cSH	69	1700	697
Volume to Capacity	2.19	0.47	0.11
Queue Length 95th (ft)	354	0	9
Control Delay (s)	674.6	0.0	4.6
Lane LOS	F		A
Approach Delay (s)	674.6	0.0	4.6
Approach LOS	F		

Intersection Summary			
Average Delay	47.7		
Intersection Capacity Utilization	117.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	20	70	425	20	35	355
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	78	472	22	39	394
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.86					
vC, conflicting volume	956	483			494	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	948	483			494	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	87			96	
cM capacity (veh/h)	240	583			1069	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	100	494	433
Volume Left	22	0	39
Volume Right	78	22	0
cSH	443	1700	1069
Volume to Capacity	0.23	0.29	0.04
Queue Length 95th (ft)	21	0	3
Control Delay (s)	15.5	0.0	1.1
Lane LOS	C		A
Approach Delay (s)	15.5	0.0	1.1
Approach LOS	C		

Intersection Summary			
Average Delay		2.0	
Intersection Capacity Utilization		59.6%	ICU Level of Service B
Analysis Period (min)		15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	65	10	50	390	340	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	11	56	433	378	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.89	0.89	0.89			
vC, conflicting volume	942	397	417			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	935	325	347			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	71	98	95			
cM capacity (veh/h)	250	640	1083			

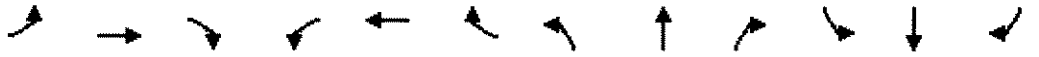
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	83	489	417
Volume Left	72	56	0
Volume Right	11	0	39
cSH	272	1083	1700
Volume to Capacity	0.31	0.05	0.25
Queue Length 95th (ft)	31	4	0
Control Delay (s)	24.0	1.5	0.0
Lane LOS	C	A	
Approach Delay (s)	24.0	1.5	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	2.8		
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1830		1770	1787			1939			1729	
Flt Permitted	0.28	1.00		0.49	1.00			0.95			0.91	
Satd. Flow (perm)	499	1830		916	1787			1851			1595	
Volume (vph)	40	265	35	30	460	25	25	205	40	45	155	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	294	39	33	511	28	28	228	44	50	172	67
RTOR Reduction (vph)	0	6	0	0	2	0	0	5	0	0	10	0
Lane Group Flow (vph)	44	327	0	33	537	0	0	295	0	0	279	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	19.5	19.5		19.5	19.5			15.0			15.0	
Effective Green, g (s)	20.5	20.5		20.5	20.5			16.0			16.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.33			0.33	
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)	208	764		382	746			603			520	
v/s Ratio Prot		0.18			c0.30							
v/s Ratio Perm	0.09			0.04				0.16			c0.17	
v/c Ratio	0.21	0.43		0.09	0.72			0.49			0.54	
Uniform Delay, d1	9.1	10.1		8.6	11.9			13.3			13.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.4		0.1	3.3			0.6			1.1	
Delay (s)	9.6	10.5		8.7	15.2			13.9			14.6	
Level of Service	A	B		A	B			B			B	
Approach Delay (s)		10.4			14.9			13.9			14.6	
Approach LOS		B			B			B			B	

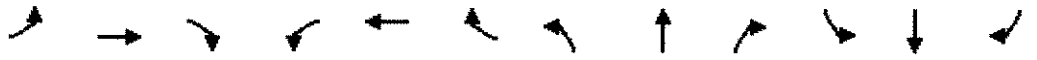
Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1871		1652	1764				
Flt Permitted	0.32	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	645	1739			1871		1652	1764				
Volume (vph)	15	310	0	0	480	60	100	190	30	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	344	0	0	533	67	111	211	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	6	0	0	0	0
Lane Group Flow (vph)	17	344	0	0	595	0	111	238	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	25.9	25.9			25.9		10.5	10.5				
Effective Green, g (s)	26.9	26.9			26.9		11.5	11.5				
Actuated g/C Ratio	0.55	0.55			0.55		0.24	0.24				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	356	959			1031		389	416				
v/s Ratio Prot		0.20			c0.32			c0.13				
v/s Ratio Perm	0.03						0.07					
v/c Ratio	0.05	0.36			0.58		0.29	0.57				
Uniform Delay, d1	5.0	6.1			7.2		15.3	16.5				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.2			0.8		0.4	1.9				
Delay (s)	5.1	6.4			8.0		15.7	18.4				
Level of Service	A	A			A		B	B				
Approach Delay (s)		6.3			8.0			17.5			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

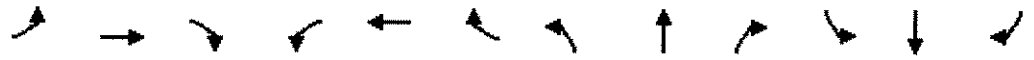


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1669		1711	1801	1531		1626		1652	1739	1583
Flt Permitted	0.47	1.00		0.61	1.00	1.00		0.91		0.73	1.00	1.00
Satd. Flow (perm)	759	1669		1101	1801	1531		1493		1265	1739	1583
Volume (vph)	30	185	5	40	315	135	10	25	5	75	170	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	206	6	44	350	150	11	28	6	83	189	72
RTOR Reduction (vph)	0	1	0	0	0	81	0	5	0	0	0	49
Lane Group Flow (vph)	33	211	0	44	350	69	0	40	0	83	189	23
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	26.6	26.6		27.7	27.7	27.7		11.1		19.2	19.2	19.2
Effective Green, g (s)	27.6	27.6		28.7	28.7	28.7		12.1		20.2	20.2	20.2
Actuated g/C Ratio	0.44	0.44		0.46	0.46	0.46		0.19		0.32	0.32	0.32
Clearance Time (s)	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
Lane Grp Cap (vph)	336	738		506	828	704		290		435	563	512
v/s Ratio Prot		0.13			c0.19					0.01	c0.11	
v/s Ratio Perm	0.04			0.04		0.05		0.03		0.05		0.01
v/c Ratio	0.10	0.29		0.09	0.42	0.10		0.14		0.19	0.34	0.05
Uniform Delay, d1	10.1	11.1		9.5	11.3	9.5		20.8		15.3	16.0	14.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2		0.1	0.3	0.1		0.2		0.2	0.4	0.0
Delay (s)	10.3	11.3		9.6	11.6	9.6		21.1		15.5	16.4	14.5
Level of Service	B	B		A	B	A		C		B	B	B
Approach Delay (s)		11.2			10.9			21.1			15.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	62.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1736	1478	1486	1516			1834	1794	1593	1833	
Flt Permitted		0.99	1.00	0.64	1.00			0.89	1.00	0.63	1.00	
Satd. Flow (perm)		1714	1478	999	1516			1656	1794	1049	1833	
Volume (vph)	5	165	45	20	270	70	60	130	25	20	45	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	183	50	22	300	78	67	144	28	22	50	6
RTOR Reduction (vph)	0	0	31	0	12	0	0	0	13	0	4	0
Lane Group Flow (vph)	0	189	19	22	366	0	0	211	15	22	52	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		15.2	15.2	15.2	15.2			11.9	11.9	11.9	11.9	
Effective Green, g (s)		16.2	16.2	16.2	16.2			12.9	12.9	12.9	12.9	
Actuated g/C Ratio		0.38	0.38	0.38	0.38			0.31	0.31	0.31	0.31	
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)		660	569	384	583			507	550	321	562	
v/s Ratio Prot					c0.24						0.03	
v/s Ratio Perm		0.11	0.01	0.02				c0.13	0.01	0.02		
v/c Ratio		0.29	0.03	0.06	0.63			0.42	0.03	0.07	0.09	
Uniform Delay, d1		9.0	8.1	8.1	10.5			11.6	10.2	10.3	10.4	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.1	2.1			0.6	0.0	0.1	0.1	
Delay (s)		9.2	8.1	8.2	12.6			12.2	10.2	10.4	10.5	
Level of Service		A	A	A	B			B	B	B	B	
Approach Delay (s)		9.0			12.4			11.9			10.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	42.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.98			1.00			0.99	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1795			1923			1853			2093	
Flt Permitted		0.95			0.96			0.98			0.98	
Satd. Flow (perm)		1728			1865			1824			2062	
Volume (vph)	10	30	10	5	20	5	20	315	5	5	105	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	33	11	6	22	6	22	350	6	6	117	6
RTOR Reduction (vph)	0	9	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	46	0	0	34	0	0	377	0	0	127	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		346			373			707			799	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.21			0.06	
v/c Ratio		0.13			0.09			0.53			0.16	
Uniform Delay, d1		26.3			26.1			18.9			16.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.8			0.5			2.9			0.4	
Delay (s)		27.1			26.6			21.8			16.4	
Level of Service		C			C			C			B	
Approach Delay (s)		27.1			26.6			21.8			16.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.98		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1872		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1872		
Volume (vph)	5	180	15	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	200	17	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	222	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	491		
v/s Ratio Prot	0.00	c0.12		
v/s Ratio Perm				
v/c Ratio	0.01	0.45		
Uniform Delay, d1	21.8	24.7		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	3.0		
Delay (s)	21.9	27.7		
Level of Service	C	C		
Approach Delay (s)		27.5		
Approach LOS		C		

Intersection Summary

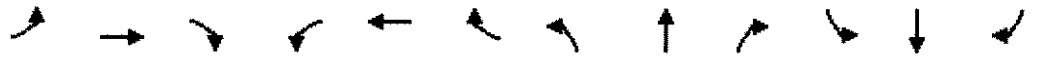
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1817	1583	1770	3536		1770	3500	
Flt Permitted		0.77	1.00		0.85	1.00	0.31	1.00		0.29	1.00	
Satd. Flow (perm)		1441	1583		1592	1583	583	3536		540	3500	
Volume (vph)	60	25	110	15	15	15	85	885	5	10	565	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	28	122	17	17	17	94	983	6	11	628	50
RTOR Reduction (vph)	0	0	100	0	0	14	0	1	0	0	7	0
Lane Group Flow (vph)	0	95	22	0	34	3	94	988	0	11	671	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		10.3	10.3		10.3	10.3	38.8	38.8		29.4	29.4	
Effective Green, g (s)		10.3	10.3		10.3	10.3	38.8	38.8		29.4	29.4	
Actuated g/C Ratio		0.18	0.18		0.18	0.18	0.68	0.68		0.51	0.51	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		260	286		287	286	508	2403		278	1802	
v/s Ratio Prot							0.02	c0.28			0.19	
v/s Ratio Perm		c0.07	0.01		0.02	0.00	0.11			0.02		
v/c Ratio		0.37	0.08		0.12	0.01	0.19	0.41		0.04	0.37	
Uniform Delay, d1		20.5	19.4		19.6	19.2	3.6	4.1		6.9	8.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.1		0.2	0.0	0.2	0.1		0.1	0.1	
Delay (s)		21.4	19.6		19.8	19.2	3.7	4.2		6.9	8.4	
Level of Service		C	B		B	B	A	A		A	A	
Approach Delay (s)		20.4			19.6			4.1			8.4	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3299		1652	3265	
Flt Permitted		0.75	1.00	0.71	1.00		0.34	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		597	3299		1652	3265	
Volume (vph)	50	10	240	15	5	10	95	1040	10	10	610	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	267	17	6	11	106	1156	11	11	678	56
RTOR Reduction (vph)	0	0	237	0	10	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	67	30	17	7	0	106	1167	0	11	727	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		678	2207		21	1365	
v/s Ratio Prot					0.00		0.04	c0.35		0.01	c0.22	
v/s Ratio Perm		c0.05	0.02	0.01			0.06					
v/c Ratio		0.45	0.18	0.11	0.03		0.16	0.53		0.52	0.53	
Uniform Delay, d1		29.1	28.3	28.0	27.8		5.5	5.9		34.4	15.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		0.5	0.9		10.4	1.5	
Delay (s)		29.9	28.4	28.2	27.8		6.0	6.9		44.8	16.8	
Level of Service		C	C	C	C		A	A		D	B	
Approach Delay (s)		28.7			28.0			6.8			17.2	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1255	50	0	0	720	0	0	935	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1394	56	0	0	800	0	0	1039	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	706	744	0	0	800	0	0	1039	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.2	28.2			24.7			24.7	
Effective Green, g (s)				30.2	30.2			26.7			26.7	
Actuated g/C Ratio				0.47	0.47			0.41			0.41	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				782	787			1456			1456	
v/s Ratio Prot								0.23			c0.29	
v/s Ratio Perm				0.42	0.44							
v/c Ratio				0.90	0.95			0.55			0.71	
Uniform Delay, d1				16.0	16.6			14.5			15.9	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				13.7	19.8			0.4			1.7	
Delay (s)				29.7	36.4			15.0			17.6	
Level of Service				C	D			B			B	
Approach Delay (s)		0.0			33.1			15.0			17.6	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.6%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	80	30	40	155	10	25	320	45	5	145	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	89	33	44	172	11	28	356	50	6	161	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	128	228	433	178
Volume Left (vph)	6	44	28	6
Volume Right (vph)	33	11	50	11
Hadj (s)	-0.11	0.04	-0.02	0.00
Departure Headway (s)	5.9	5.9	5.3	5.7
Degree Utilization, x	0.21	0.37	0.63	0.28
Capacity (veh/h)	514	555	652	572
Control Delay (s)	10.5	12.3	16.9	10.9
Approach Delay (s)	10.5	12.3	16.9	10.9
Approach LOS	B	B	C	B

Intersection Summary				
Delay			13.9	
HCM Level of Service			B	
Intersection Capacity Utilization		55.0%	ICU Level of Service	A
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	75	5	395	225	5	345
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	6	439	250	6	383
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked						
vC, conflicting volume	958	564			689	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	958	564			689	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	99			99	
cM capacity (veh/h)	284	525			905	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	89	689	389
Volume Left	83	0	6
Volume Right	6	250	0
cSH	292	1700	905
Volume to Capacity	0.30	0.41	0.01
Queue Length 95th (ft)	31	0	0
Control Delay (s)	22.6	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	22.6	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	1.8		
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												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	0	50	10	0	10	50	895	5	5	585	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	0	56	11	0	11	56	994	6	6	650	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1306	1797	350	1500	1819	500	700			1000		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1306	1797	350	1500	1819	500	700			1000		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	100	91	85	100	98	94			99		
cM capacity (veh/h)	109	74	646	73	71	516	893			688		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	22	553	503	331	375
Volume Left	22	11	56	0	6	0
Volume Right	56	11	0	6	0	50
cSH	268	128	893	1700	688	1700
Volume to Capacity	0.29	0.17	0.06	0.30	0.01	0.22
Queue Length 95th (ft)	29	15	5	0	1	0
Control Delay (s)	23.8	39.0	1.7	0.0	0.3	0.0
Lane LOS	C	E	A		A	
Approach Delay (s)	23.8	39.0	0.9		0.1	
Approach LOS	C	E				

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	58.6%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	195	30	110	70	10	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	217	33	122	78	11	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			250		556	233
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		556	233
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		98	94
cM capacity (veh/h)			1316		447	806

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	250	200	56
Volume Left	0	122	11
Volume Right	33	0	44
cSH	1700	1316	694
Volume to Capacity	0.15	0.09	0.08
Queue Length 95th (ft)	0	8	7
Control Delay (s)	0.0	5.2	10.6
Lane LOS		A	B
Approach Delay (s)	0.0	5.2	10.6
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD*
Analysis Time Period	*AM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *LOCUST/LEDGE*	North/South Street: *ROUTE 7*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*655*	*255*	*0*	*405*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*727*	*283*	*0*	*450*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*55*	*0*	*20*	*85*
Peak Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*61*	*0*	*22*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*0*			*61*			*116*
C (m) (vph)		*682*			*512*			*337*
v/c		*0.00*			*0.12*			*0.34*
95% queue length		*0.00*			*0.40*			*1.49*
Control Delay		*10.3*			*13.0*			*21.2*
LOS		*B*			*B*			*C*
Approach Delay	--	--	*13.0*			*21.2*		
Approach LOS	--	--	*B*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*75*	*580*	*0*	*0*	*420*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*83*	*644*	*0*	*0*	*466*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*150*	*0*	*0*	*0*	*0*
Peak Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*166*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*83*				*166*			
C (m) (vph)	*1095*				*147*			
v/c	*0.08*				*1.13*			
95% queue length	*0.25*				*9.17*			
Control Delay	*8.6*				*173.9*			
LOS	*A*				*F*			
Approach Delay	--	--	*173.9*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 1

2008 PM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1823	1583		1813	1583		3479		1770	1851	
Flt Permitted		0.74	1.00		0.80	1.00		0.74		0.95	1.00	
Satd. Flow (perm)		1388	1583		1495	1583		2590		1770	1851	
Volume (vph)	20	25	55	90	75	165	85	550	50	135	685	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	28	61	100	83	183	94	611	56	150	761	33
RTOR Reduction (vph)	0	0	51	0	0	129	0	0	0	0	0	0
Lane Group Flow (vph)	0	50	10	0	183	54	0	761	0	150	794	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		20.6	20.6		20.6	36.3		73.4		15.7	94.1	
Effective Green, g (s)		21.6	21.6		21.6	38.3		74.4		16.7	95.1	
Actuated g/C Ratio		0.17	0.17		0.17	0.29		0.57		0.13	0.73	
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)		231	263		248	466		1482		227	1354	
v/s Ratio Prot			0.01			0.03				c0.08	c0.43	
v/s Ratio Perm		0.04			c0.12			0.29				
v/c Ratio		0.22	0.04		0.74	0.12		0.51		0.66	0.59	
Uniform Delay, d1		46.9	45.5		51.5	33.5		16.8		54.0	8.2	
Progression Factor		1.00	1.00		1.00	1.00		0.54		1.00	1.00	
Incremental Delay, d2		0.5	0.1		10.9	0.1		1.1		7.0	1.9	
Delay (s)		47.4	45.5		62.4	33.6		10.2		61.0	10.1	
Level of Service		D	D		E	C		B		E	B	
Approach Delay (s)		46.4			48.0			10.2			18.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.7%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.88		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1836			1640		1770	1846		1770	1849	
Flt Permitted	0.39	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	718	1836			1624		1770	1846		1770	1849	
Volume (vph)	20	50	5	5	10	105	20	560	35	90	705	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	56	6	6	11	117	22	622	39	100	783	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	62	0	0	134	0	22	661	0	100	822	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	15.4	15.4			15.4		4.8	81.8		11.6	88.6	
Effective Green, g (s)	16.4	16.4			16.4		5.8	82.8		12.6	89.6	
Actuated g/C Ratio	0.13	0.13			0.13		0.04	0.64		0.10	0.69	
Clearance Time (s)	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	
Lane Grp Cap (vph)	91	232			205		79	1176		172	1274	
v/s Ratio Prot		0.03					0.01	0.36		c0.06	c0.44	
v/s Ratio Perm	0.03				c0.08							
v/c Ratio	0.24	0.27			0.65		0.28	0.56		0.58	0.65	
Uniform Delay, d1	51.2	51.4			54.1		60.1	13.3		56.2	11.3	
Progression Factor	1.00	1.00			1.00		0.91	0.91		1.10	0.66	
Incremental Delay, d2	1.4	0.6			7.3		1.6	1.6		4.1	2.1	
Delay (s)	52.6	52.0			61.4		56.0	13.7		66.1	9.5	
Level of Service	D	D			E		E	B		E	A	
Approach Delay (s)		52.1			61.4			15.1			15.7	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.99			0.93			0.99		1.00	0.99	
Flt Protected		0.98			0.99			1.00		0.95	1.00	
Satd. Flow (prot)		1739			1652			1774		1711	1781	
Flt Permitted		0.63			0.85			1.00		0.95	1.00	
Satd. Flow (perm)		1123			1423			1774		1711	1781	
Volume (vph)	50	50	10	55	40	100	0	465	50	90	580	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	56	11	61	44	111	0	517	56	100	644	50
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	123	0	0	216	0	0	573	0	100	694	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		22.4			22.4			74.2		12.2	91.4	
Effective Green, g (s)		23.4			23.4			75.2		13.2	92.4	
Actuated g/C Ratio		0.18			0.18			0.58		0.10	0.71	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		202			256			1026		174	1266	
v/s Ratio Prot								0.32		0.06	c0.39	
v/s Ratio Perm		0.11			c0.15							
v/c Ratio		0.61			0.84			0.56		0.57	0.55	
Uniform Delay, d1		49.1			51.5			17.1		55.7	8.9	
Progression Factor		1.00			1.00			0.22		1.19	0.16	
Incremental Delay, d2		5.1			21.6			1.9		3.6	1.3	
Delay (s)		54.2			73.1			5.6		69.6	2.8	
Level of Service		D			E			A		E	A	
Approach Delay (s)		54.2			73.1			5.6			11.2	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

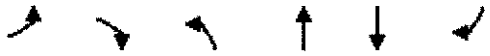
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.99			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		1.00	1.00		0.99	
Satd. Flow (prot)		1832			1846	1583		1854	1583		1823	
Flt Permitted		0.98			0.90	1.00		0.97	1.00		0.87	
Satd. Flow (perm)		1805			1669	1583		1799	1583		1614	
Volume (vph)	10	230	30	65	295	35	10	100	70	70	170	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	256	33	72	328	39	11	111	78	78	189	17
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	58	0	0	0
Lane Group Flow (vph)	0	300	0	0	400	19	0	122	20	0	284	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		21.6			21.6	21.6		11.3	11.3		11.3	
Effective Green, g (s)		22.6			22.6	22.6		12.3	12.3		12.3	
Actuated g/C Ratio		0.48			0.48	0.48		0.26	0.26		0.26	
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)		859			794	753		466	410		418	
v/s Ratio Prot												
v/s Ratio Perm		0.17			c0.24	0.01		0.07	0.01		c0.18	
v/c Ratio		0.35			0.50	0.02		0.26	0.05		0.68	
Uniform Delay, d1		7.8			8.6	6.6		14.0	13.2		15.8	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.2			0.5	0.0		0.3	0.1		4.4	
Delay (s)		8.1			9.1	6.6		14.3	13.3		20.2	
Level of Service		A			A	A		B	B		C	
Approach Delay (s)		8.1			8.9			13.9			20.2	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	47.5	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	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	1863	1583	1770	1863	1764	
Flt Permitted	1.00	1.00	0.34	1.00	0.96	
Satd. Flow (perm)	1863	1583	637	1863	1764	
Volume (vph)	490	260	20	670	435	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	544	289	22	744	483	33
RTOR Reduction (vph)	0	29	0	0	2	0
Lane Group Flow (vph)	544	260	22	744	514	0
Turn Type	Prot		Perm			
Protected Phases	2	8		6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	74.7	113.8	74.7	74.7	39.1	
Effective Green, g (s)	75.7	115.8	75.7	75.7	40.1	
Actuated g/C Ratio	0.58	0.89	0.58	0.58	0.31	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1085	1459	371	1085	544	
v/s Ratio Prot	0.29	0.05		c0.40	c0.29	
v/s Ratio Perm		0.11	0.03			
v/c Ratio	0.50	0.18	0.06	0.69	0.94	
Uniform Delay, d1	16.0	0.9	11.7	18.9	43.9	
Progression Factor	1.20	0.00	1.31	0.96	1.00	
Incremental Delay, d2	1.5	0.1	0.3	3.0	25.3	
Delay (s)	20.8	0.1	15.6	21.2	69.2	
Level of Service	C	A	B	C	E	
Approach Delay (s)	13.6			21.1	69.2	
Approach LOS	B			C	E	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.25	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	443	1863	1801	1583
Volume (vph)	365	45	15	380	540	685
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	406	50	17	422	600	761
RTOR Reduction (vph)	0	30	0	0	0	0
Lane Group Flow (vph)	406	20	17	422	600	761
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	49.8	49.8	64.0	64.0	64.0	64.0
Effective Green, g (s)	50.8	50.8	65.0	65.0	65.0	65.0
Actuated g/C Ratio	0.39	0.39	0.50	0.50	0.50	0.50
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)	669	619	222	932	901	792
v/s Ratio Prot	c0.24	0.01		0.23	0.33	
v/s Ratio Perm			0.04			c0.48
v/c Ratio	0.61	0.03	0.08	0.45	0.67	0.96
Uniform Delay, d1	31.6	24.4	16.9	21.0	24.4	31.3
Progression Factor	0.68	0.64	1.00	1.00	0.86	0.87
Incremental Delay, d2	3.9	0.1	0.7	1.6	1.4	19.2
Delay (s)	25.4	15.8	17.6	22.6	22.5	46.4
Level of Service	C	B	B	C	C	D
Approach Delay (s)	24.4			22.4	35.8	
Approach LOS	C			C	D	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↰	↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.91			0.98		1.00	0.98	
Flt Protected		0.99			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		1919			1802			1941		1711	1764	
Flt Permitted		0.81			0.96			0.93		0.59	1.00	
Satd. Flow (perm)		1580			1744			1817		1056	1764	
Volume (vph)	40	75	20	25	75	195	15	90	15	175	255	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	83	22	28	83	217	17	100	17	194	283	44
RTOR Reduction (vph)	0	9	0	0	95	0	0	7	0	0	7	0
Lane Group Flow (vph)	0	140	0	0	233	0	0	127	0	194	320	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.6			11.6			11.7		22.9	22.9	
Effective Green, g (s)		12.6			12.6			12.7		23.9	23.9	
Actuated g/C Ratio		0.27			0.27			0.27		0.51	0.51	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		422			466			489		635	893	
v/s Ratio Prot										0.05	c0.18	
v/s Ratio Perm		0.09			c0.13			0.07		0.11		
v/c Ratio		0.33			0.50			0.26		0.31	0.36	
Uniform Delay, d1		13.9			14.6			13.6		6.8	7.0	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.5			0.8			0.3		0.3	0.2	
Delay (s)		14.4			15.5			13.8		7.1	7.3	
Level of Service		B			B			B		A	A	
Approach Delay (s)		14.4			15.5			13.8			7.2	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	110	310	640	60	135	300
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	344	711	67	150	333
RTOR Reduction (vph)	0	218	0	0	0	68
Lane Group Flow (vph)	122	126	711	67	150	265
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	11.3	45.8	63.0	79.3	34.5	102.5
Effective Green, g (s)	12.3	47.8	64.0	80.3	35.5	103.5
Actuated g/C Ratio	0.09	0.37	0.49	0.62	0.27	0.80
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	176	582	871	1151	483	1260
v/s Ratio Prot	c0.07	0.06	c0.40	0.04	c0.08	0.17
v/s Ratio Perm		0.02				
v/c Ratio	0.69	0.22	0.82	0.06	0.31	0.21
Uniform Delay, d1	57.0	28.2	28.0	9.9	37.5	3.2
Progression Factor	1.00	1.00	0.01	0.00	0.93	3.15
Incremental Delay, d2	11.2	0.2	2.1	0.0	1.6	0.1
Delay (s)	68.2	28.4	2.4	0.0	36.3	10.3
Level of Service	E	C	A	A	D	B
Approach Delay (s)	38.9			2.2	18.4	
Approach LOS	D			A	B	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.87			0.97		1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1623			1760		1770	1828		1770	1860	
Flt Permitted		0.98			0.56		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1597			1013		1770	1828		1770	1860	
Volume (vph)	5	0	75	30	10	10	5	420	60	15	925	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	83	33	11	11	6	467	67	17	1028	11
RTOR Reduction (vph)	0	76	0	0	7	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	13	0	0	48	0	6	532	0	17	1039	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		10.2			10.2		1.6	95.4		3.2	97.0	
Effective Green, g (s)		11.2			11.2		2.6	96.4		4.2	98.0	
Actuated g/C Ratio		0.09			0.09		0.02	0.74		0.03	0.75	
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)		138			87		35	1356		57	1402	
v/s Ratio Prot							0.00	0.29		c0.01	c0.56	
v/s Ratio Perm		0.01			c0.05							
v/c Ratio		0.10			0.55		0.17	0.39		0.30	0.74	
Uniform Delay, d1		54.7			57.0		62.6	6.1		61.5	8.9	
Progression Factor		1.00			0.99		0.85	1.27		1.19	0.39	
Incremental Delay, d2		0.3			6.2		2.1	0.8		2.1	2.6	
Delay (s)		55.0			62.6		55.4	8.5		75.4	6.0	
Level of Service		E			E		E	A		E	A	
Approach Delay (s)		55.0			62.6			9.1			7.1	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.99		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1762			1826		1770	1859		1770	1852	
Flt Permitted		0.81			0.80		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1444			1472		1770	1859		1770	1852	
Volume (vph)	65	120	85	25	95	10	60	410	5	10	980	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	133	94	28	106	11	67	456	6	11	1089	44
RTOR Reduction (vph)	0	13	0	0	2	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	286	0	0	143	0	67	462	0	11	1132	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		25.0			25.0		7.8	82.2		1.6	76.0	
Effective Green, g (s)		26.0			26.0		8.8	83.2		2.6	77.0	
Actuated g/C Ratio		0.20			0.20		0.07	0.64		0.02	0.59	
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)		289			294		120	1190		35	1097	
v/s Ratio Prot							c0.04	0.25		0.01	c0.61	
v/s Ratio Perm		c0.20			0.10							
v/c Ratio		0.99			0.49		0.56	0.39		0.31	1.03	
Uniform Delay, d1		51.9			46.1		58.7	11.2		62.8	26.5	
Progression Factor		1.00			1.00		0.90	1.41		1.24	0.36	
Incremental Delay, d2		50.1			1.3		5.1	0.9		3.7	31.9	
Delay (s)		102.0			47.3		57.9	16.7		81.5	41.3	
Level of Service		F			D		E	B		F	D	
Approach Delay (s)		102.0			47.3			21.9			41.7	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM Average Control Delay	45.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.98		1.00	0.99	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1798		1770	1820		1770	1851	
Flt Permitted		0.70	1.00		0.67		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1300	1583		1249		1770	1820		1770	1851	
Volume (vph)	60	25	105	90	50	5	85	410	75	5	1040	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	28	117	100	56	6	94	456	83	6	1156	50
RTOR Reduction (vph)	0	0	99	0	1	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	95	18	0	161	0	94	536	0	6	1205	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		18.7	18.7		18.7		11.3	88.5		1.6	78.8	
Effective Green, g (s)		19.7	19.7		19.7		12.3	89.5		2.6	79.8	
Actuated g/C Ratio		0.15	0.15		0.15		0.09	0.69		0.02	0.61	
Clearance Time (s)		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	
Lane Grp Cap (vph)		197	240		189		167	1253		35	1136	
v/s Ratio Prot							c0.05	0.29		0.00	c0.65	
v/s Ratio Perm		0.07	0.01		c0.13							
v/c Ratio		0.48	0.07		0.85		0.56	0.43		0.17	1.06	
Uniform Delay, d1		50.5	47.3		53.7		56.3	8.9		62.6	25.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.26	0.26	
Incremental Delay, d2		1.9	0.1		29.1		4.3	1.1		0.6	33.2	
Delay (s)		52.3	47.5		82.8		60.6	10.0		79.7	39.6	
Level of Service		D	D		F		E	B		E	D	
Approach Delay (s)		49.6			82.8			17.5			39.8	
Approach LOS		D			F			B			D	

Intersection Summary			
HCM Average Control Delay	37.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	88.7%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	120	80	50	165	15	15	160	30	25	230	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	133	89	56	183	17	17	178	33	28	256	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	228	256	228	294
Volume Left (vph)	6	56	17	28
Volume Right (vph)	89	17	33	11
Hadj (s)	-0.20	0.04	-0.04	0.03
Departure Headway (s)	5.8	5.9	5.9	5.8
Degree Utilization, x	0.37	0.42	0.37	0.48
Capacity (veh/h)	547	550	547	569
Control Delay (s)	12.1	13.2	12.3	14.0
Approach Delay (s)	12.1	13.2	12.3	14.0
Approach LOS	B	B	B	B

Intersection Summary			
Delay	13.0		
HCM Level of Service	B		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	125	50	50	120	10	60	185	55	15	335	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	139	56	56	133	11	67	206	61	17	372	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	206	200	333	400
Volume Left (vph)	11	56	67	17
Volume Right (vph)	56	11	61	11
Hadj (s)	-0.12	0.06	-0.04	0.03
Departure Headway (s)	6.5	6.7	6.1	6.0
Degree Utilization, x	0.37	0.37	0.56	0.67
Capacity (veh/h)	476	463	552	564
Control Delay (s)	13.4	13.7	16.5	20.1
Approach Delay (s)	13.4	13.7	16.5	20.1
Approach LOS	B	B	C	C

Intersection Summary			
Delay	16.7		
HCM Level of Service	C		
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	65	5	10	100	100	5	20	15	140	50	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	72	6	11	111	111	6	22	17	156	56	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	83	233	44	222
Volume Left (vph)	6	11	6	156
Volume Right (vph)	6	111	17	11
Hadj (s)	0.01	-0.24	-0.17	0.14
Departure Headway (s)	4.9	4.4	4.8	4.9
Degree Utilization, x	0.11	0.29	0.06	0.30
Capacity (veh/h)	682	761	684	697
Control Delay (s)	8.5	9.2	8.1	9.9
Approach Delay (s)	8.5	9.2	8.1	9.9
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.3		
HCM Level of Service	A		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	20	25	5	30	15	750	50	45	1200	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	22	28	6	33	17	833	56	50	1333	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1247	
pX, platoon unblocked	0.74	0.74	0.74	0.74	0.74		0.74					
vC, conflicting volume	2369	2361	1339	2358	2339	861	1344			889		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2841	2830	1456	2826	2800	861	1463			889		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	52	81	0	54	91	95			93		
cM capacity (veh/h)	4	12	119	4	12	355	343			762		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	39	67	906	1394
Volume Left	11	28	17	50
Volume Right	22	33	56	11
cSH	12	9	343	762
Volume to Capacity	3.20	7.63	0.05	0.07
Queue Length 95th (ft)	Err	Err	4	5
Control Delay (s)	Err	Err	1.9	3.4
Lane LOS	F	F	A	A
Approach Delay (s)	Err	Err	1.9	3.4
Approach LOS	F	F		

Intersection Summary			
Average Delay	441.4		
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	25	60	720	25	60	1200
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	67	800	28	67	1333
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	2281	814			828	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2508	781			797	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	80			90	
cM capacity (veh/h)	24	335			701	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	828	1400
Volume Left	28	0	67
Volume Right	67	28	0
cSH	70	1700	701
Volume to Capacity	1.35	0.49	0.10
Queue Length 95th (ft)	192	0	8
Control Delay (s)	329.9	0.0	5.0
Lane LOS	F		A
Approach Delay (s)	329.9	0.0	5.0
Approach LOS	F		

Intersection Summary			
Average Delay	16.4		
Intersection Capacity Utilization	121.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	20	50	355	10	40	505
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	56	394	11	44	561
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.75					
vC, conflicting volume	1050	400			406	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1067	400			406	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	91			96	
cM capacity (veh/h)	177	650			1153	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	78	406	606
Volume Left	22	0	44
Volume Right	56	11	0
cSH	369	1700	1153
Volume to Capacity	0.21	0.24	0.04
Queue Length 95th (ft)	20	0	3
Control Delay (s)	17.4	0.0	1.0
Lane LOS	C		A
Approach Delay (s)	17.4	0.0	1.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	60	15	10	285	480	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	17	11	317	533	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.77	0.77	0.77			
vC, conflicting volume	894	556	578			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	863	424	453			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	73	97	99			
cM capacity (veh/h)	247	486	855			

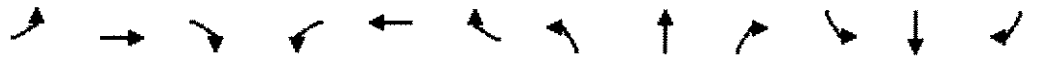
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	83	328	578
Volume Left	67	11	0
Volume Right	17	0	44
cSH	274	855	1700
Volume to Capacity	0.30	0.01	0.34
Queue Length 95th (ft)	31	1	0
Control Delay (s)	23.7	0.5	0.0
Lane LOS	C	A	
Approach Delay (s)	23.7	0.5	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1840		1770	1784			1947			1756	
Flt Permitted	0.26	1.00		0.32	1.00			0.90			0.94	
Satd. Flow (perm)	471	1840		602	1784			1768			1663	
Volume (vph)	70	400	35	40	460	30	50	215	25	35	235	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	444	39	44	511	33	56	239	28	39	261	50
RTOR Reduction (vph)	0	4	0	0	3	0	0	3	0	0	5	0
Lane Group Flow (vph)	78	479	0	44	541	0	0	320	0	0	345	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	20.3	20.3		20.3	20.3			16.9			16.9	
Effective Green, g (s)	21.3	21.3		21.3	21.3			17.9			17.9	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.35			0.35	
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)	194	757		248	734			611			575	
v/s Ratio Prot		0.26			c0.30							
v/s Ratio Perm	0.17			0.07				0.18			c0.21	
v/c Ratio	0.40	0.63		0.18	0.74			0.52			0.60	
Uniform Delay, d1	10.8	12.1		9.7	12.9			13.5			14.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.4	1.7		0.3	3.9			0.8			1.7	
Delay (s)	12.1	13.9		10.0	16.8			14.4			15.7	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		13.6			16.3			14.4			15.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1881		1652	1771				
Flt Permitted	0.26	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	522	1739			1881		1652	1771				
Volume (vph)	35	475	0	0	500	40	65	280	35	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	528	0	0	556	44	72	311	39	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	4	0	0	0	0
Lane Group Flow (vph)	39	528	0	0	596	0	72	346	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	21.5	21.5			21.5		14.6	14.6				
Effective Green, g (s)	22.5	22.5			22.5		15.6	15.6				
Actuated g/C Ratio	0.46	0.46			0.46		0.32	0.32				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	242	807			873		531	570				
v/s Ratio Prot		0.30			c0.32			c0.20				
v/s Ratio Perm	0.07						0.04					
v/c Ratio	0.16	0.65			0.68		0.14	0.61				
Uniform Delay, d1	7.5	10.0			10.2		11.7	13.9				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.3	1.9			2.2		0.1	1.8				
Delay (s)	7.8	11.9			12.4		11.8	15.7				
Level of Service	A	B			B		B	B				
Approach Delay (s)		11.6			12.4			15.0			0.0	
Approach LOS		B			B			B			A	

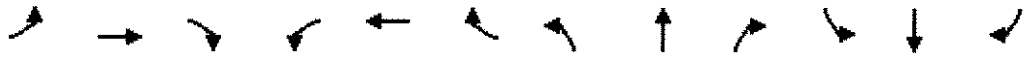
Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1655		1711	1801	1531		1605		1652	1739	1583
Flt Permitted	0.42	1.00		0.48	1.00	1.00		0.44		0.78	1.00	1.00
Satd. Flow (perm)	677	1655		861	1801	1531		713		1355	1739	1583
Volume (vph)	110	275	25	70	350	155	5	55	25	225	285	95
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	306	28	78	389	172	6	61	28	250	317	106
RTOR Reduction (vph)	0	4	0	0	0	102	0	16	0	0	0	69
Lane Group Flow (vph)	122	330	0	78	389	70	0	79	0	250	317	37
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	21.0	21.0		20.8	20.8	20.8		5.1		17.4	17.4	17.4
Effective Green, g (s)	22.0	22.0		21.8	21.8	21.8		6.1		18.4	18.4	18.4
Actuated g/C Ratio	0.41	0.41		0.41	0.41	0.41		0.11		0.34	0.34	0.34
Clearance Time (s)	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
Lane Grp Cap (vph)	279	682		351	735	625		81		513	599	545
v/s Ratio Prot		0.20			c0.22					0.08	c0.18	
v/s Ratio Perm	0.18			0.09		0.05		c0.11		0.09		0.02
v/c Ratio	0.44	0.48		0.22	0.53	0.11		0.98		0.49	0.53	0.07
Uniform Delay, d1	11.3	11.5		10.3	11.9	9.8		23.6		14.9	14.0	11.7
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.5		0.3	0.7	0.1		91.1		0.7	0.8	0.1
Delay (s)	12.4	12.1		10.6	12.6	9.9		114.7		15.6	14.9	11.8
Level of Service	B	B		B	B	A		F		B	B	B
Approach Delay (s)		12.2			11.6			114.7			14.7	
Approach LOS		B			B			F			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1734	1478	1486	1525			1823	1794	1593	1840	
Flt Permitted		0.97	1.00	0.52	1.00			0.82	1.00	0.64	1.00	
Satd. Flow (perm)		1684	1478	821	1525			1520	1794	1081	1840	
Volume (vph)	15	265	85	60	315	65	70	90	60	95	110	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	294	94	67	350	72	78	100	67	106	122	11
RTOR Reduction (vph)	0	0	40	0	9	0	0	0	39	0	3	0
Lane Group Flow (vph)	0	311	54	67	413	0	0	178	28	106	130	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		16.9	16.9	16.9	16.9			12.1	12.1	12.1	12.1	
Effective Green, g (s)		17.9	17.9	17.9	17.9			13.1	13.1	13.1	13.1	
Actuated g/C Ratio		0.41	0.41	0.41	0.41			0.30	0.30	0.30	0.30	
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)		685	601	334	620			453	534	322	548	
v/s Ratio Prot					c0.27						0.07	
v/s Ratio Perm		0.18	0.04	0.08				c0.12	0.02	0.10		
v/c Ratio		0.45	0.09	0.20	0.67			0.39	0.05	0.33	0.24	
Uniform Delay, d1		9.5	8.0	8.4	10.6			12.3	11.0	12.0	11.7	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.1	0.3	2.7			0.6	0.0	0.6	0.2	
Delay (s)		10.0	8.1	8.7	13.3			12.9	11.1	12.6	11.9	
Level of Service		A	A	A	B			B	B	B	B	
Approach Delay (s)		9.5			12.7			12.4			12.2	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	44.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			1.00			0.99	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1794			1926			1853			2092	
Flt Permitted		0.94			0.89			0.98			0.99	
Satd. Flow (perm)		1708			1747			1815			2080	
Volume (vph)	15	45	15	20	30	5	15	265	5	5	240	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	17	22	33	6	17	294	6	6	267	17
RTOR Reduction (vph)	0	11	0	0	0	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	73	0	0	61	0	0	316	0	0	287	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		342			349			703			806	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			c0.17			0.14	
v/c Ratio		0.21			0.17			0.45			0.36	
Uniform Delay, d1		26.7			26.5			18.2			17.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.1			2.1			1.2	
Delay (s)		28.2			27.6			20.3			18.6	
Level of Service		C			C			C			B	
Approach Delay (s)		28.2			27.6			20.3			18.6	
Approach LOS		C			C			C			B	

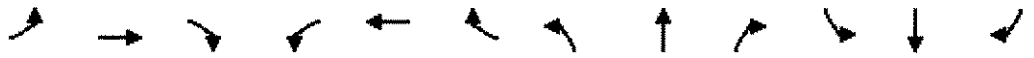
Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	1.00		
Flt Protected	0.95	0.95		
Satd. Flow (prot)	1888	1886		
Flt Permitted	0.95	0.95		
Satd. Flow (perm)	1888	1886		
Volume (vph)	15	345	5	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	383	6	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	394	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	495		
v/s Ratio Prot	0.01	c0.21		
v/s Ratio Perm				
v/c Ratio	0.03	0.80		
Uniform Delay, d1	22.0	27.5		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	12.5		
Delay (s)	22.1	40.0		
Level of Service	C	D		
Approach Delay (s)		39.3		
Approach LOS		D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583		1808	1583	1770	3534		1770	3498	
Flt Permitted		0.74	1.00		0.79	1.00	0.19	1.00		0.25	1.00	
Satd. Flow (perm)		1371	1583		1464	1583	356	3534		470	3498	
Volume (vph)	55	15	145	30	20	35	145	1005	10	30	835	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	17	161	33	22	39	161	1117	11	33	928	78
RTOR Reduction (vph)	0	0	138	0	0	34	0	1	0	0	8	0
Lane Group Flow (vph)	0	78	23	0	55	5	161	1127	0	33	998	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		8.0	8.0		8.0	8.0	41.1	41.1		30.1	30.1	
Effective Green, g (s)		8.0	8.0		8.0	8.0	41.1	41.1		30.1	30.1	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.72	0.72		0.53	0.53	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		192	222		205	222	430	2544		248	1844	
v/s Ratio Prot							0.05	c0.32			c0.29	
v/s Ratio Perm		c0.06	0.01		0.04	0.00	0.22			0.07		
v/c Ratio		0.41	0.10		0.27	0.02	0.37	0.44		0.13	0.54	
Uniform Delay, d1		22.4	21.4		21.9	21.2	4.1	3.3		6.9	8.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4	0.2		0.7	0.0	0.6	0.1		0.2	0.3	
Delay (s)		23.8	21.6		22.6	21.2	4.6	3.4		7.1	9.3	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		22.3			22.1			3.6			9.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1478	1770	1909		1652	3297		1652	3295	
Flt Permitted		0.79	1.00	0.71	1.00		0.24	1.00		0.95	1.00	
Satd. Flow (perm)		1415	1478	1329	1909		411	3297		1652	3295	
Volume (vph)	35	25	165	30	20	35	185	1220	15	40	885	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	28	183	33	22	39	206	1356	17	44	983	17
RTOR Reduction (vph)	0	0	162	0	35	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	67	21	33	26	0	206	1372	0	44	999	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.7	7.7	7.7	7.7		41.5	41.5		3.6	28.3	
Effective Green, g (s)		7.7	7.7	7.7	7.7		42.5	42.5		3.6	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.62	0.62		0.05	0.43	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		160	167	150	215		561	2052		87	1414	
v/s Ratio Prot					0.01		0.09	c0.42		0.03	c0.30	
v/s Ratio Perm		c0.05	0.01	0.02			0.14					
v/c Ratio		0.42	0.12	0.22	0.12		0.37	0.67		0.51	0.71	
Uniform Delay, d1		28.2	27.3	27.6	27.3		11.6	8.3		31.5	16.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.1	0.3	0.1		1.8	1.8		1.7	3.0	
Delay (s)		28.9	27.4	27.8	27.4		13.4	10.1		33.2	19.0	
Level of Service		C	C	C	C		B	B		C	B	
Approach Delay (s)		27.8			27.5			10.5			19.6	
Approach LOS		C			C			B			B	

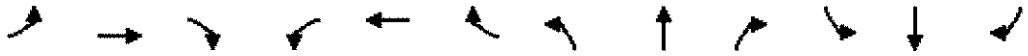
Intersection Summary				
HCM Average Control Delay	15.7	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1700			3539			3537	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1700			3539			3537	
Volume (vph)	0	0	0	1310	135	0	0	790	0	0	1380	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1456	150	0	0	878	0	0	1533	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	782	824	0	0	878	0	0	1538	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			30.0			30.0	
Effective Green, g (s)				30.0	30.0			32.0			32.0	
Actuated g/C Ratio				0.43	0.43			0.46			0.46	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				720	729			1618			1617	
v/s Ratio Prot								0.25			c0.43	
v/s Ratio Perm				0.47	0.48							
v/c Ratio				1.09	1.13			0.54			0.95	
Uniform Delay, d1				20.0	20.0			13.7			18.3	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				59.3	75.3			0.4			12.7	
Delay (s)				79.3	95.3			14.1			30.9	
Level of Service				E	F			B			C	
Approach Delay (s)		0.0			87.5			14.1			30.9	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	49.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	130	60	65	115	15	20	270	55	60	255	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	144	67	72	128	17	22	300	61	67	283	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	233	217	383	378
Volume Left (vph)	22	72	22	67
Volume Right (vph)	67	17	61	28
Hadj (s)	-0.12	0.05	-0.05	0.03
Departure Headway (s)	6.8	7.0	6.3	6.4
Degree Utilization, x	0.44	0.42	0.67	0.67
Capacity (veh/h)	457	440	537	526
Control Delay (s)	15.2	15.1	21.3	21.4
Approach Delay (s)	15.2	15.1	21.3	21.4
Approach LOS	C	C	C	C

Intersection Summary			
Delay	19.0		
HCM Level of Service	C		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	145	5	370	230	5	605
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	161	6	411	256	6	672
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.94					
vC, conflicting volume	1222	539			667	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1236	539			667	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	12	99			99	
cM capacity (veh/h)	182	543			923	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	167	667	678
Volume Left	161	0	6
Volume Right	6	256	0
cSH	186	1700	923
Volume to Capacity	0.89	0.39	0.01
Queue Length 95th (ft)	169	0	0
Control Delay (s)	92.0	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	92.0	0.0	0.2
Approach LOS	F		

Intersection Summary			
Average Delay	10.2		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	0	50	10	0	10	45	995	5	5	895	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	0	56	11	0	11	50	1106	6	6	994	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1681	2228	508	1772	2236	556	1017			1111		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1681	2228	508	1772	2236	556	1017			1111		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	61	100	89	75	100	98	93			99		
cM capacity (veh/h)	56	39	510	44	38	475	678			624		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	22	603	558	503	519
Volume Left	22	11	50	0	6	0
Volume Right	56	11	0	6	0	22
cSH	155	80	678	1700	624	1700
Volume to Capacity	0.50	0.28	0.07	0.33	0.01	0.31
Queue Length 95th (ft)	61	25	6	0	1	0
Control Delay (s)	49.7	66.0	2.0	0.0	0.3	0.0
Lane LOS	E	F	A		A	
Approach Delay (s)	49.7	66.0	1.0		0.1	
Approach LOS	E	F				

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	69.0%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	125	20	35	145	35	65
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	22	39	161	39	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			161		389	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			161		389	150
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	92
cM capacity (veh/h)			1418		598	896

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	161	200	111
Volume Left	0	39	39
Volume Right	22	0	72
cSH	1700	1418	763
Volume to Capacity	0.09	0.03	0.15
Queue Length 95th (ft)	0	2	13
Control Delay (s)	0.0	1.7	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	10.5
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*630*	*255*	*30*	*705*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*700*	*283*	*33*	*783*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*55*	*0*	*25*	*75*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*61*	*0*	*27*	*83*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*33*			*61*			*110*
C (m) (vph)		*698*			*522*			*170*
v/c		*0.05*			*0.12*			*0.65*
95% queue length		*0.15*			*0.39*			*3.69*
Control Delay		*10.4*			*12.8*			*58.4*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*12.8*			*58.4*		
Approach LOS	--	--	*B*			*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*550*	*0*	*0*	*750*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*611*	*0*	*0*	*833*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*150*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*166*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*88*				*166*			
C (m) (vph)	*800*				*85*			
v/c	*0.11*				*1.95*			
95% queue length	*0.37*				*14.44*			
Control Delay	*10.1*				*550.2*			
LOS	*B*				*F*			
Approach Delay	--	--	*550.2*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 1

2028 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1823	1583		1817	1583		3495		1770	1859	
Flt Permitted		0.84	1.00		0.82	1.00		0.68		0.95	1.00	
Satd. Flow (perm)		1559	1583		1531	1583		2373		1770	1859	
Volume (vph)	15	20	45	50	50	80	60	500	30	130	1015	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	22	50	56	56	89	67	556	33	144	1128	17
RTOR Reduction (vph)	0	0	44	0	0	68	0	0	0	0	0	0
Lane Group Flow (vph)	0	39	6	0	112	21	0	656	0	144	1145	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		13.9	13.9		13.9	28.7		81.1		14.8	100.9	
Effective Green, g (s)		14.9	14.9		14.9	30.7		82.1		15.8	101.9	
Actuated g/C Ratio		0.11	0.11		0.11	0.24		0.63		0.12	0.78	
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)		179	181		175	374		1499		215	1457	
v/s Ratio Prot			0.00			0.01				0.08	c0.62	
v/s Ratio Perm		0.03			c0.07			0.28				
v/c Ratio		0.22	0.03		0.64	0.06		0.44		0.67	0.79	
Uniform Delay, d1		52.3	51.1		55.0	38.4		12.2		54.6	7.9	
Progression Factor		1.00	1.00		1.00	1.00		0.60		1.00	1.00	
Incremental Delay, d2		0.6	0.1		7.7	0.1		0.8		7.7	4.3	
Delay (s)		52.9	51.2		62.7	38.5		8.2		62.3	12.2	
Level of Service		D	D		E	D		A		E	B	
Approach Delay (s)		51.9			52.0			8.2			17.8	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.85			0.89		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583			1647		1770	1859		1770	1856	
Flt Permitted	0.36	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	666	1583			1608		1770	1859		1770	1856	
Volume (vph)	25	0	5	15	10	115	10	455	5	110	980	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	0	6	17	11	128	11	506	6	122	1089	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	28	6	0	0	156	0	11	512	0	122	1117	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	16.3	16.3			16.3		1.6	79.2		13.3	90.9	
Effective Green, g (s)	17.3	17.3			17.3		2.6	80.2		14.3	91.9	
Actuated g/C Ratio	0.13	0.13			0.13		0.02	0.62		0.11	0.71	
Clearance Time (s)	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	
Lane Grp Cap (vph)	89	211			214		35	1147		195	1312	
v/s Ratio Prot		0.00					0.01	0.28		c0.07	c0.60	
v/s Ratio Perm	0.04				c0.10							
v/c Ratio	0.31	0.03			0.73		0.31	0.45		0.63	0.85	
Uniform Delay, d1	51.0	49.0			54.1		62.8	13.2		55.3	14.0	
Progression Factor	1.00	1.00			1.00		0.98	0.66		1.12	0.78	
Incremental Delay, d2	2.0	0.1			11.7		4.7	1.2		4.1	4.9	
Delay (s)	53.0	49.1			65.8		66.1	9.9		66.2	15.8	
Level of Service	D	D			E		E	A		E	B	
Approach Delay (s)		52.3			65.8			11.1			20.8	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1717		1711	1781		1711	1783	
Flt Permitted		0.66			0.80		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1180			1404		1711	1781		1711	1783	
Volume (vph)	60	20	5	70	40	20	5	385	30	80	855	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	22	6	78	44	22	6	428	33	89	950	67
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	95	0	0	144	0	6	461	0	89	1017	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		16.9			16.9		1.6	80.7		11.2	90.3	
Effective Green, g (s)		17.9			17.9		2.6	81.7		12.2	91.3	
Actuated g/C Ratio		0.14			0.14		0.02	0.63		0.09	0.70	
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)		162			193		34	1119		161	1252	
v/s Ratio Prot							0.00	0.26		c0.05	c0.57	
v/s Ratio Perm		0.08			c0.10							
v/c Ratio		0.59			0.75		0.18	0.41		0.55	0.81	
Uniform Delay, d1		52.6			53.9		62.6	12.1		56.3	13.4	
Progression Factor		1.00			1.00		0.78	1.49		1.28	0.09	
Incremental Delay, d2		5.3			14.5		2.3	1.0		2.4	3.4	
Delay (s)		57.9			68.4		51.4	19.1		74.2	4.7	
Level of Service		E			E		D	B		E	A	
Approach Delay (s)		57.9			68.4			19.5			10.3	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.99			1.00	0.85		1.00	0.85		0.98	
Flt Protected		0.99			1.00	1.00		0.99	1.00		0.99	
Satd. Flow (prot)		1825			1857	1583		1842	1583		1799	
Flt Permitted		0.89			0.97	1.00		0.90	1.00		0.89	
Satd. Flow (perm)		1646			1816	1583		1680	1583		1617	
Volume (vph)	45	150	15	15	225	45	40	140	10	45	135	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	167	17	17	250	50	44	156	11	50	150	44
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	8	0	0	0
Lane Group Flow (vph)	0	234	0	0	267	21	0	200	3	0	244	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		15.5			15.5	15.5		9.5	9.5		9.5	
Effective Green, g (s)		16.5			16.5	16.5		10.5	10.5		10.5	
Actuated g/C Ratio		0.41			0.41	0.41		0.26	0.26		0.26	
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)		682			753	656		443	418		427	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.15	0.01		0.12	0.00		c0.15	
v/c Ratio		0.34			0.35	0.03		0.45	0.01		0.57	
Uniform Delay, d1		8.0			8.0	6.9		12.2	10.8		12.7	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.3			0.3	0.0		0.7	0.0		1.8	
Delay (s)		8.3			8.3	6.9		13.0	10.8		14.5	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		8.3			8.1			12.9			14.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

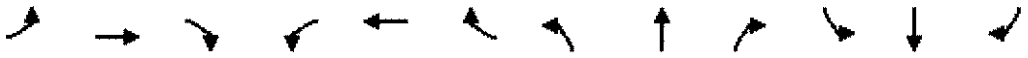
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	1863	1583	1770	1863	1769	
Flt Permitted	1.00	1.00	0.41	1.00	0.95	
Satd. Flow (perm)	1863	1583	761	1863	1769	
Volume (vph)	455	265	10	890	295	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	506	294	11	989	328	11
RTOR Reduction (vph)	0	32	0	0	1	0
Lane Group Flow (vph)	506	262	11	989	338	0
Turn Type	Prot		Perm			
Protected Phases	2	8		6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	86.5	113.8	86.5	86.5	27.3	
Effective Green, g (s)	87.5	115.8	87.5	87.5	28.3	
Actuated g/C Ratio	0.67	0.89	0.67	0.67	0.22	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1254	1459	512	1254	385	
v/s Ratio Prot	0.27	0.04		c0.53	c0.19	
v/s Ratio Perm		0.13	0.01			
v/c Ratio	0.40	0.18	0.02	0.79	0.88	
Uniform Delay, d1	9.5	0.9	7.0	14.8	49.2	
Progression Factor	0.68	0.00	0.33	0.46	1.00	
Incremental Delay, d2	0.9	0.1	0.0	3.2	19.7	
Delay (s)	7.4	0.1	2.4	10.0	68.9	
Level of Service	A	A	A	B	E	
Approach Delay (s)	4.7			9.9	68.9	
Approach LOS	A			A	E	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.42	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	762	1863	1801	1583
Volume (vph)	275	20	15	445	385	845
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	306	22	17	494	428	939
RTOR Reduction (vph)	0	15	0	0	0	0
Lane Group Flow (vph)	306	7	17	494	428	939
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	39.8	39.8	74.0	74.0	74.0	74.0
Effective Green, g (s)	40.8	40.8	75.0	75.0	75.0	75.0
Actuated g/C Ratio	0.31	0.31	0.58	0.58	0.58	0.58
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)	537	497	440	1075	1039	913
v/s Ratio Prot	c0.18	0.00		0.27	0.24	
v/s Ratio Perm			0.02			c0.59
v/c Ratio	0.57	0.01	0.04	0.46	0.41	1.03
Uniform Delay, d1	37.3	30.7	11.9	15.8	15.3	27.5
Progression Factor	0.73	0.81	1.00	1.00	0.99	1.03
Incremental Delay, d2	4.3	0.1	0.2	1.4	0.2	32.7
Delay (s)	31.6	25.0	12.1	17.2	15.3	60.9
Level of Service	C	C	B	B	B	E
Approach Delay (s)	31.2			17.1	46.6	
Approach LOS	C			B	D	

Intersection Summary			
HCM Average Control Delay	37.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

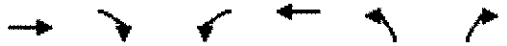
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		1.00			0.91			0.99		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1947			1801			1973		1711	1764	
Flt Permitted		0.76			0.98			0.99		0.47	1.00	
Satd. Flow (perm)		1511			1774			1951		854	1764	
Volume (vph)	35	50	0	10	55	135	10	240	10	110	190	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	56	0	11	61	150	11	267	11	122	211	33
RTOR Reduction (vph)	0	0	0	0	111	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	95	0	0	111	0	0	287	0	122	238	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		9.5			9.5			20.6		30.3	30.3	
Effective Green, g (s)		10.5			10.5			21.6		31.3	31.3	
Actuated g/C Ratio		0.20			0.20			0.41		0.60	0.60	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		302			355			803		602	1052	
v/s Ratio Prot										0.02	c0.14	
v/s Ratio Perm		c0.06			0.06			c0.15		0.10		
v/c Ratio		0.31			0.31			0.36		0.20	0.23	
Uniform Delay, d1		17.9			17.9			10.7		5.4	4.9	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.6			0.5			0.3		0.2	0.1	
Delay (s)		18.5			18.4			10.9		5.5	5.1	
Level of Service		B			B			B		A	A	
Approach Delay (s)		18.5			18.4			10.9			5.2	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	60	115	700	160	230	230
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	128	778	178	256	256
RTOR Reduction (vph)	0	75	0	0	0	47
Lane Group Flow (vph)	67	53	778	178	256	209
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	8.7	51.8	57.0	70.7	43.1	105.1
Effective Green, g (s)	9.7	53.8	58.0	71.7	44.1	106.1
Actuated g/C Ratio	0.07	0.41	0.45	0.55	0.34	0.82
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	139	655	790	1028	600	1292
v/s Ratio Prot	c0.04	0.03	c0.44	0.10	c0.14	0.13
v/s Ratio Perm		0.01				
v/c Ratio	0.48	0.08	0.98	0.17	0.43	0.16
Uniform Delay, d1	57.7	23.1	35.6	14.5	33.2	2.5
Progression Factor	1.00	1.00	0.27	0.13	1.02	4.37
Incremental Delay, d2	2.6	0.1	6.6	0.0	2.1	0.1
Delay (s)	60.4	23.2	16.1	1.9	35.8	11.1
Level of Service	E	C	B	A	D	B
Approach Delay (s)	35.9			13.5	23.5	
Approach LOS	D			B	C	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.97		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1641			1783		1770	1828		1770	1857	
Flt Permitted		0.94			0.89		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1551			1620		1770	1828		1770	1857	
Volume (vph)	5	0	25	45	60	25	85	430	60	10	790	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	28	50	67	28	94	478	67	11	878	17
RTOR Reduction (vph)	0	25	0	0	7	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	138	0	94	543	0	11	895	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		14.8			14.8		11.1	90.8		3.2	82.9	
Effective Green, g (s)		15.8			15.8		12.1	91.8		4.2	83.9	
Actuated g/C Ratio		0.12			0.12		0.09	0.71		0.03	0.65	
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)		189			197		165	1291		57	1198	
v/s Ratio Prot							c0.05	0.30		0.01	c0.48	
v/s Ratio Perm		0.01			c0.09							
v/c Ratio		0.05			0.70		0.57	0.42		0.19	0.75	
Uniform Delay, d1		50.5			54.8		56.5	8.0		61.2	15.8	
Progression Factor		1.00			1.08		0.95	1.18		1.30	0.20	
Incremental Delay, d2		0.1			10.6		4.1	0.9		0.8	2.0	
Delay (s)		50.6			69.8		57.4	10.3		80.2	5.1	
Level of Service		D			E		E	B		F	A	
Approach Delay (s)		50.6			69.8			17.3			6.0	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
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		↔			↔		↰	↑		↰	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780			1808		1770	1860		1770	1843	
Flt Permitted		0.83			0.88		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1503			1601		1770	1860		1770	1843	
Volume (vph)	35	75	35	15	65	15	75	525	5	5	795	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	83	39	17	72	17	83	583	6	6	883	67
RTOR Reduction (vph)	0	9	0	0	5	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	152	0	0	101	0	83	589	0	6	949	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		16.2			16.2		10.5	91.0		1.6	82.1	
Effective Green, g (s)		17.2			17.2		11.5	92.0		2.6	83.1	
Actuated g/C Ratio		0.13			0.13		0.09	0.71		0.02	0.64	
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)		199			212		157	1316		35	1178	
v/s Ratio Prot							c0.05	0.32		0.00	c0.51	
v/s Ratio Perm		c0.10			0.06							
v/c Ratio		0.77			0.48		0.53	0.45		0.17	0.81	
Uniform Delay, d1		54.5			52.2		56.7	8.1		62.6	17.4	
Progression Factor		1.00			1.00		0.90	1.20		1.21	0.22	
Incremental Delay, d2		16.0			1.7		2.8	1.0		1.6	4.1	
Delay (s)		70.4			53.9		54.0	10.7		77.6	8.0	
Level of Service		E			D		D	B		E	A	
Approach Delay (s)		70.4			53.9			16.1			8.4	
Approach LOS		E			D			B			A	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	74.8%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1826	1583		1768		1770	1841		1770	1846	
Flt Permitted		0.86	1.00		0.42		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1603	1583		764		1770	1841		1770	1846	
Volume (vph)	60	90	115	50	5	5	160	540	45	5	790	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	100	128	56	6	6	178	600	50	6	878	56
RTOR Reduction (vph)	0	0	83	0	3	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	167	45	0	65	0	178	649	0	6	933	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		17.2	17.2		17.2		17.8	90.0		1.6	73.8	
Effective Green, g (s)		18.2	18.2		18.2		18.8	91.0		2.6	74.8	
Actuated g/C Ratio		0.14	0.14		0.14		0.14	0.70		0.02	0.58	
Clearance Time (s)		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	
Lane Grp Cap (vph)		224	222		107		256	1289		35	1062	
v/s Ratio Prot							c0.10	0.35		0.00	c0.51	
v/s Ratio Perm		c0.10	0.03		0.09							
v/c Ratio		0.75	0.20		0.61		0.70	0.50		0.17	0.88	
Uniform Delay, d1		53.7	49.5		52.6		52.9	9.0		62.6	23.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.33	0.41	
Incremental Delay, d2		12.6	0.5		9.9		7.9	1.4		1.4	6.5	
Delay (s)		66.3	50.0		62.5		60.8	10.4		84.6	16.2	
Level of Service		E	D		E		E	B		F	B	
Approach Delay (s)		59.2			62.5			21.3			16.7	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	73.5%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	100	50	25	105	25	10	160	35	10	150	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	111	56	28	117	28	11	178	39	11	167	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	172	172	228	183
Volume Left (vph)	6	28	11	11
Volume Right (vph)	56	28	39	6
Hadj (s)	-0.15	-0.03	-0.06	0.03
Departure Headway (s)	5.1	5.2	5.0	5.2
Degree Utilization, x	0.24	0.25	0.32	0.26
Capacity (veh/h)	642	630	666	639
Control Delay (s)	9.7	9.9	10.3	10.0
Approach Delay (s)	9.7	9.9	10.3	10.0
Approach LOS	A	A	B	B

Intersection Summary			
Delay	10.0		
HCM Level of Service	B		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	35	50	55	125	5	55	195	40	10	210	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	39	56	61	139	6	61	217	44	11	233	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	100	206	322	250
Volume Left (vph)	6	61	61	11
Volume Right (vph)	56	6	44	6
Hadj (s)	-0.29	0.08	-0.01	0.03
Departure Headway (s)	5.5	5.7	5.2	5.3
Degree Utilization, x	0.15	0.32	0.46	0.37
Capacity (veh/h)	562	577	651	632
Control Delay (s)	9.5	11.4	12.6	11.4
Approach Delay (s)	9.5	11.4	12.6	11.4
Approach LOS	A	B	B	B

Intersection Summary			
Delay	11.6		
HCM Level of Service	B		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	120	0	10	20	115	5	50	15	145	20	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	133	0	11	22	128	6	56	17	161	22	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	156	161	78	200
Volume Left (vph)	22	11	6	161
Volume Right (vph)	0	128	17	17
Hadj (s)	0.06	-0.43	-0.08	0.15
Departure Headway (s)	4.9	4.4	4.9	4.9
Degree Utilization, x	0.21	0.20	0.10	0.27
Capacity (veh/h)	688	760	678	686
Control Delay (s)	9.2	8.5	8.4	9.7
Approach Delay (s)	9.2	8.5	8.4	9.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.1		
HCM Level of Service	A		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	15	50	5	40	20	740	30	25	1205	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	17	56	6	44	22	822	33	28	1339	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1247	
pX, platoon unblocked	0.84	0.84	0.84	0.84	0.84		0.84					
vC, conflicting volume	2328	2297	1342	2300	2283	839	1344			856		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2576	2539	1405	2543	2523	839	1409			856		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	42	73	88	0	74	88	95			96		
cM capacity (veh/h)	10	21	144	10	21	366	408			784		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	106	878	1372
Volume Left	6	56	22	28
Volume Right	17	44	33	6
cSH	29	18	408	784
Volume to Capacity	0.97	5.90	0.05	0.04
Queue Length 95th (ft)	79	Err	4	3
Control Delay (s)	355.8	Err	1.9	1.8
Lane LOS	F	F	A	A
Approach Delay (s)	355.8	Err	1.9	1.8
Approach LOS	F	F		

Intersection Summary			
Average Delay	448.7		
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	65	80	695	20	75	1165
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	89	772	22	83	1294
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	2244	783			794	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2481	742			755	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	75			88	
cM capacity (veh/h)	24	349			719	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	161	794	1378
Volume Left	72	0	83
Volume Right	89	22	0
cSH	50	1700	719
Volume to Capacity	3.23	0.47	0.12
Queue Length 95th (ft)	Err	0	10
Control Delay (s)	Err	0.0	5.5
Lane LOS	F		A
Approach Delay (s)	Err	0.0	5.5
Approach LOS	F		

Intersection Summary			
Average Delay	693.7		
Intersection Capacity Utilization	121.8%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	60	55	425	30	60	325
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	61	472	33	67	361
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.88					
vC, conflicting volume	983	489			506	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	981	489			506	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	89			94	
cM capacity (veh/h)	227	579			1059	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	128	506	428
Volume Left	67	0	67
Volume Right	61	33	0
cSH	320	1700	1059
Volume to Capacity	0.40	0.30	0.06
Queue Length 95th (ft)	46	0	5
Control Delay (s)	23.5	0.0	1.9
Lane LOS	C		A
Approach Delay (s)	23.5	0.0	1.9
Approach LOS	C		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	60	10	70	400	325	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	11	78	444	361	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.92	0.92	0.92			
vC, conflicting volume	994	394	428			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	994	343	379			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	71	98	93			
cM capacity (veh/h)	232	645	1087			

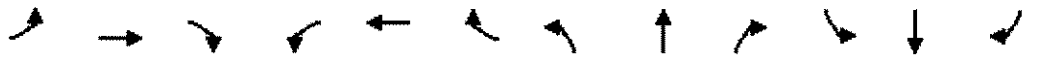
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	522	428
Volume Left	67	78	0
Volume Right	11	0	67
cSH	256	1087	1700
Volume to Capacity	0.30	0.07	0.25
Queue Length 95th (ft)	31	6	0
Control Delay (s)	25.1	2.0	0.0
Lane LOS	D	A	
Approach Delay (s)	25.1	2.0	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1833		1770	1785			1925			1729	
Flt Permitted	0.25	1.00		0.32	1.00			0.96			0.83	
Satd. Flow (perm)	449	1833		603	1785			1860			1456	
Volume (vph)	45	335	40	35	405	25	25	265	75	80	170	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	372	44	39	450	28	28	294	83	89	189	72
RTOR Reduction (vph)	0	7	0	0	3	0	0	7	0	0	7	0
Lane Group Flow (vph)	50	409	0	39	475	0	0	398	0	0	343	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	20.1	20.1		20.1	20.1			25.9			25.9	
Effective Green, g (s)	21.1	21.1		21.1	21.1			26.9			26.9	
Actuated g/C Ratio	0.35	0.35		0.35	0.35			0.44			0.44	
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)	156	636		209	619			823			644	
v/s Ratio Prot		0.22			c0.27							
v/s Ratio Perm	0.11			0.06				0.21			c0.24	
v/c Ratio	0.32	0.64		0.19	0.77			0.48			0.53	
Uniform Delay, d1	14.6	16.7		13.9	17.7			12.0			12.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	2.2		0.4	5.7			0.4			0.8	
Delay (s)	15.8	18.9		14.3	23.3			12.5			13.2	
Level of Service	B	B		B	C			B			B	
Approach Delay (s)		18.6			22.6			12.5			13.2	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.7%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.95				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1869		1652	1719				
Flt Permitted	0.31	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	625	1739			1869		1652	1719				
Volume (vph)	20	335	0	0	435	60	110	195	85	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	372	0	0	483	67	122	217	94	0	0	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	15	0	0	0	0
Lane Group Flow (vph)	22	372	0	0	543	0	122	296	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	20.7	20.7			20.7		13.2	13.2				
Effective Green, g (s)	21.7	21.7			21.7		14.2	14.2				
Actuated g/C Ratio	0.47	0.47			0.47		0.31	0.31				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	293	815			876		507	527				
v/s Ratio Prot		0.21			c0.29			c0.17				
v/s Ratio Perm	0.04						0.07					
v/c Ratio	0.08	0.46			0.62		0.24	0.56				
Uniform Delay, d1	6.8	8.3			9.2		12.0	13.4				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.4			1.3		0.2	1.4				
Delay (s)	6.9	8.7			10.5		12.3	14.8				
Level of Service	A	A			B		B	B				
Approach Delay (s)		8.6			10.5			14.1			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	1.00
Satd. Flow (prot)	1540	1669		1711	1801	1531		1623		1652	1739	1583
Flt Permitted	0.48	1.00		0.63	1.00	1.00		0.83		0.72	1.00	1.00
Satd. Flow (perm)	783	1669		1138	1801	1531		1371		1258	1739	1583
Volume (vph)	30	175	5	45	295	115	15	25	5	100	250	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	194	6	50	328	128	17	28	6	111	278	56
RTOR Reduction (vph)	0	1	0	0	0	76	0	5	0	0	0	37
Lane Group Flow (vph)	33	199	0	50	328	52	0	46	0	111	278	19
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	18.9	18.9		19.6	19.6	19.6		8.9		16.3	16.3	16.3
Effective Green, g (s)	19.9	19.9		20.6	20.6	20.6		9.9		17.3	17.3	17.3
Actuated g/C Ratio	0.39	0.39		0.40	0.40	0.40		0.19		0.34	0.34	0.34
Clearance Time (s)	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
Lane Grp Cap (vph)	305	650		459	726	617		266		452	589	536
v/s Ratio Prot		0.12			c0.18					0.02	c0.16	
v/s Ratio Perm	0.04			0.04		0.03		0.03		0.07		0.01
v/c Ratio	0.11	0.31		0.11	0.45	0.08		0.17		0.25	0.47	0.04
Uniform Delay, d1	9.9	10.8		9.5	11.1	9.4		17.2		12.3	13.3	11.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.1	0.4	0.1		0.3		0.3	0.6	0.0
Delay (s)	10.1	11.1		9.6	11.6	9.5		17.5		12.5	13.9	11.3
Level of Service	B	B		A	B	A		B		B	B	B
Approach Delay (s)		10.9			10.9			17.5			13.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)		1736	1478	1486	1516			1836	1794	1593	1833	
Flt Permitted		0.99	1.00	0.64	1.00			0.90	1.00	0.63	1.00	
Satd. Flow (perm)		1713	1478	1009	1516			1680	1794	1049	1833	
Volume (vph)	5	155	45	20	245	65	55	135	25	20	45	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	172	50	22	272	72	61	150	28	22	50	6
RTOR Reduction (vph)	0	0	32	0	13	0	0	0	13	0	4	0
Lane Group Flow (vph)	0	178	18	22	331	0	0	211	15	22	52	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		13.9	13.9	13.9	13.9			12.3	12.3	12.3	12.3	
Effective Green, g (s)		14.9	14.9	14.9	14.9			13.3	13.3	13.3	13.3	
Actuated g/C Ratio		0.36	0.36	0.36	0.36			0.32	0.32	0.32	0.32	
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)		620	535	365	548			542	579	339	592	
v/s Ratio Prot					c0.22						0.03	
v/s Ratio Perm		0.10	0.01	0.02				c0.13	0.01	0.02		
v/c Ratio		0.29	0.03	0.06	0.60			0.39	0.03	0.06	0.09	
Uniform Delay, d1		9.4	8.5	8.6	10.7			10.8	9.5	9.6	9.7	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.0	0.1	1.9			0.5	0.0	0.1	0.1	
Delay (s)		9.6	8.5	8.7	12.6			11.3	9.5	9.7	9.8	
Level of Service		A	A	A	B			B	A	A	A	
Approach Delay (s)		9.4			12.4			11.1			9.8	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.98			1.00			0.99	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1792			1923			1854			2094	
Flt Permitted		0.93			0.96			0.99			0.98	
Satd. Flow (perm)		1690			1864			1833			2065	
Volume (vph)	15	30	10	5	20	5	15	305	5	5	110	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	33	11	6	22	6	17	339	6	6	122	6
RTOR Reduction (vph)	0	9	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	52	0	0	34	0	0	361	0	0	132	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		338			373			710			800	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.20			0.06	
v/c Ratio		0.15			0.09			0.51			0.17	
Uniform Delay, d1		26.4			26.1			18.7			16.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			0.5			2.6			0.4	
Delay (s)		27.4			26.6			21.3			16.5	
Level of Service		C			C			C			B	
Approach Delay (s)		27.4			26.6			21.3			16.5	
Approach LOS		C			C			C			B	

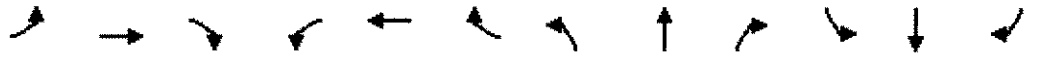
Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.98		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1870		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1870		
Volume (vph)	5	195	20	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	217	22	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	244	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	491		
v/s Ratio Prot	0.00	c0.13		
v/s Ratio Perm				
v/c Ratio	0.01	0.50		
Uniform Delay, d1	21.8	25.0		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	3.6		
Delay (s)	21.9	28.6		
Level of Service	C	C		
Approach Delay (s)		28.4		
Approach LOS		C		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583		1828	1583	1770	3536		1770	3507	
Flt Permitted		0.75	1.00		0.86	1.00	0.30	1.00		0.30	1.00	
Satd. Flow (perm)		1397	1583		1593	1583	568	3536		561	3507	
Volume (vph)	60	20	105	15	25	15	110	850	5	10	620	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	22	117	17	28	17	122	944	6	11	689	44
RTOR Reduction (vph)	0	0	103	0	0	15	0	1	0	0	5	0
Lane Group Flow (vph)	0	89	14	0	45	2	122	949	0	11	728	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		6.9	6.9		6.9	6.9	41.6	41.6		32.2	32.2	
Effective Green, g (s)		6.9	6.9		6.9	6.9	41.6	41.6		32.2	32.2	
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.74	0.74		0.57	0.57	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		171	193		195	193	533	2603		320	1999	
v/s Ratio Prot							0.02	c0.27			0.21	
v/s Ratio Perm		c0.06	0.01		0.03	0.00	0.15			0.02		
v/c Ratio		0.52	0.07		0.23	0.01	0.23	0.36		0.03	0.36	
Uniform Delay, d1		23.2	22.0		22.4	21.8	2.6	2.7		5.3	6.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.8	0.2		0.6	0.0	0.2	0.1		0.0	0.1	
Delay (s)		26.1	22.1		23.0	21.8	2.8	2.8		5.4	6.7	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		23.8			22.7			2.8			6.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3299		1652	3268	
Flt Permitted		0.75	1.00	0.71	1.00		0.31	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		547	3299		1652	3268	
Volume (vph)	50	10	250	15	5	10	95	1030	10	10	655	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	278	17	6	11	106	1144	11	11	728	56
RTOR Reduction (vph)	0	0	247	0	10	0	0	1	0	0	6	0
Lane Group Flow (vph)	0	67	31	17	7	0	106	1154	0	11	778	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		658	2207		21	1366	
v/s Ratio Prot					0.00		0.04	c0.35		0.01	c0.24	
v/s Ratio Perm		c0.05	0.02	0.01			0.07					
v/c Ratio		0.45	0.19	0.11	0.03		0.16	0.52		0.52	0.57	
Uniform Delay, d1		29.1	28.3	28.0	27.8		6.0	5.9		34.4	15.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		0.5	0.9		10.4	1.7	
Delay (s)		29.9	28.5	28.2	27.8		6.5	6.8		44.8	17.3	
Level of Service		C	C	C	C		A	A		D	B	
Approach Delay (s)		28.8			28.0			6.8			17.7	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1280	50	0	0	780	0	0	990	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1422	56	0	0	867	0	0	1100	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	720	758	0	0	867	0	0	1100	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.1	28.1			25.7			25.7	
Effective Green, g (s)				30.1	30.1			27.7			27.7	
Actuated g/C Ratio				0.46	0.46			0.42			0.42	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				769	774			1490			1490	
v/s Ratio Prot								0.24			c0.31	
v/s Ratio Perm				0.43	0.45							
v/c Ratio				0.94	0.98			0.58			0.74	
Uniform Delay, d1				16.9	17.5			14.6			16.0	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				18.5	26.9			0.6			2.0	
Delay (s)				35.5	44.5			15.2			18.0	
Level of Service				D	D			B			B	
Approach Delay (s)		0.0			40.1			15.2			18.0	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	70	30	50	145	10	20	330	55	5	150	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	78	33	56	161	11	22	367	61	6	167	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	117	228	450	183
Volume Left (vph)	6	56	22	6
Volume Right (vph)	33	11	61	11
Hadj (s)	-0.13	0.05	-0.04	0.00
Departure Headway (s)	6.0	5.9	5.2	5.7
Degree Utilization, x	0.19	0.37	0.65	0.29
Capacity (veh/h)	505	551	658	574
Control Delay (s)	10.4	12.4	17.6	11.0
Approach Delay (s)	10.4	12.4	17.6	11.0
Approach LOS	B	B	C	B

Intersection Summary			
Delay	14.3		
HCM Level of Service	B		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	80	5	385	205	5	375
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	89	6	428	228	6	417
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked						
vC, conflicting volume	969	542			656	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	969	542			656	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	68	99			99	
cM capacity (veh/h)	279	541			932	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	656	422
Volume Left	89	0	6
Volume Right	6	228	0
cSH	288	1700	932
Volume to Capacity	0.33	0.39	0.01
Queue Length 95th (ft)	35	0	0
Control Delay (s)	23.5	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	23.5	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	0	60	10	0	10	30	880	5	5	625	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	0	67	11	0	11	33	978	6	6	694	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)								1267				
pX, platoon unblocked												
vC, conflicting volume	1328	1811	403	1472	1864	492	806			983		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1328	1811	403	1472	1864	492	806			983		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	100	89	85	100	98	96			99		
cM capacity (veh/h)	107	74	597	76	69	523	815			698		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	100	22	522	494	353	458
Volume Left	33	11	33	0	6	0
Volume Right	67	11	0	6	0	111
cSH	236	132	815	1700	698	1700
Volume to Capacity	0.42	0.17	0.04	0.29	0.01	0.27
Queue Length 95th (ft)	49	15	3	0	1	0
Control Delay (s)	31.1	37.7	1.1	0.0	0.3	0.0
Lane LOS	D	E	A		A	
Approach Delay (s)	31.1	37.7	0.6		0.1	
Approach LOS	D	E				

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	58.9%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	215	35	135	85	10	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	239	39	150	94	11	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			278		653	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			278		653	258
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		97	94
cM capacity (veh/h)			1285		382	780

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	278	244	61
Volume Left	0	150	11
Volume Right	39	0	50
cSH	1700	1285	656
Volume to Capacity	0.16	0.12	0.09
Queue Length 95th (ft)	0	10	8
Control Delay (s)	0.0	5.4	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	5.4	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*605*	*295*	*0*	*445*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*672*	*327*	*0*	*494*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*60*	*0*	*20*	*85*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*66*	*0*	*22*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*0*			*66*			*116*
C (m) (vph)		*689*			*516*			*318*
v/c		*0.00*			*0.13*			*0.36*
95% queue length		*0.00*			*0.44*			*1.62*
Control Delay		*10.2*			*13.0*			*22.7*
LOS		*B*			*B*			*C*
Approach Delay	--	--	*13.0*			*22.7*		
Approach LOS	--	--	*B*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*60*	*545*	*0*	*0*	*460*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*66*	*605*	*0*	*0*	*511*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*200*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*222*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*66*				*222*			
C (m) (vph)	*1054*				*156*			
v/c	*0.06*				*1.42*			
95% queue length	*0.20*				*14.14*			
Control Delay	*8.6*				*277.7*			
LOS	*A*				*F*			
Approach Delay	--	--	*277.7*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 1

2028 PM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1817	1583		1811	1583		3482		1770	1850	
Flt Permitted		0.73	1.00		0.80	1.00		0.75		0.95	1.00	
Satd. Flow (perm)		1360	1583		1485	1583		2632		1770	1850	
Volume (vph)	20	20	90	95	70	150	90	605	50	115	635	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	22	100	106	78	167	100	672	56	128	706	33
RTOR Reduction (vph)	0	0	83	0	0	120	0	0	0	0	0	0
Lane Group Flow (vph)	0	44	17	0	184	47	0	828	0	128	739	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		20.7	20.7		20.7	34.6		75.2		13.9	94.1	
Effective Green, g (s)		21.7	21.7		21.7	36.6		76.2		14.9	95.1	
Actuated g/C Ratio		0.17	0.17		0.17	0.28		0.59		0.11	0.73	
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)		227	264		248	446		1543		203	1353	
v/s Ratio Prot			0.01			0.03				c0.07	c0.40	
v/s Ratio Perm		0.03			c0.12			0.31				
v/c Ratio		0.19	0.06		0.74	0.11		0.54		0.63	0.55	
Uniform Delay, d1		46.6	45.6		51.5	34.6		16.2		54.9	7.8	
Progression Factor		1.00	1.00		1.00	1.00		0.55		1.00	1.00	
Incremental Delay, d2		0.4	0.1		11.3	0.1		1.1		6.2	1.6	
Delay (s)		47.0	45.7		62.8	34.7		10.0		61.2	9.4	
Level of Service		D	D		E	C		A		E	A	
Approach Delay (s)		46.1			49.4			10.0			17.0	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

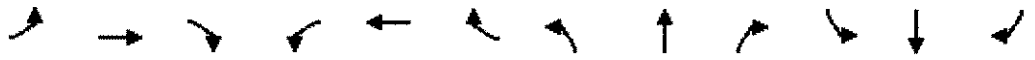
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98			0.88		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1829			1638		1770	1847		1770	1849	
Flt Permitted	0.37	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	690	1829			1624		1770	1847		1770	1849	
Volume (vph)	30	40	5	5	10	110	20	605	35	90	685	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	44	6	6	11	122	22	672	39	100	761	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	33	50	0	0	139	0	22	711	0	100	800	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	15.5	15.5			15.5		4.8	81.5		11.8	88.5	
Effective Green, g (s)	16.5	16.5			16.5		5.8	82.5		12.8	89.5	
Actuated g/C Ratio	0.13	0.13			0.13		0.04	0.63		0.10	0.69	
Clearance Time (s)	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	
Lane Grp Cap (vph)	88	232			206		79	1172		174	1273	
v/s Ratio Prot		0.03					0.01	0.38		c0.06	c0.43	
v/s Ratio Perm	0.05				c0.09							
v/c Ratio	0.38	0.22			0.67		0.28	0.61		0.57	0.63	
Uniform Delay, d1	52.0	50.9			54.2		60.1	14.1		56.0	11.1	
Progression Factor	1.00	1.00			1.00		0.88	0.91		1.11	0.71	
Incremental Delay, d2	2.7	0.5			8.4		1.5	1.8		3.9	2.0	
Delay (s)	54.7	51.4			62.6		54.3	14.6		66.0	9.9	
Level of Service	D	D			E		D	B		E	A	
Approach Delay (s)		52.7			62.6			15.8			16.1	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	66.8%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.99			0.93			0.99		1.00	0.99	
Flt Protected		0.98			0.99			1.00		0.95	1.00	
Satd. Flow (prot)		1737			1652			1774		1711	1776	
Flt Permitted		0.59			0.85			1.00		0.95	1.00	
Satd. Flow (perm)		1059			1424			1774		1711	1776	
Volume (vph)	60	50	10	55	40	100	0	500	55	95	545	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	56	11	61	44	111	0	556	61	106	606	61
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	134	0	0	216	0	0	617	0	106	667	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		22.8			22.8			73.7		12.3	91.0	
Effective Green, g (s)		23.8			23.8			74.7		13.3	92.0	
Actuated g/C Ratio		0.18			0.18			0.57		0.10	0.71	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		194			261			1019		175	1257	
v/s Ratio Prot								c0.35		c0.06	0.38	
v/s Ratio Perm		0.13			c0.15							
v/c Ratio		0.69			0.83			0.61		0.61	0.53	
Uniform Delay, d1		49.7			51.1			18.0		55.8	8.9	
Progression Factor		1.00			1.00			0.22		1.16	0.17	
Incremental Delay, d2		10.1			18.9			2.2		4.7	1.3	
Delay (s)		59.8			70.1			6.3		69.6	2.8	
Level of Service		E			E			A		E	A	
Approach Delay (s)		59.8			70.1			6.3			12.0	
Approach LOS		E			E			A			B	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

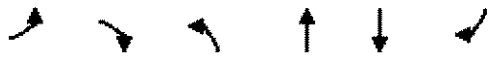


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.98			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		1.00	1.00		0.99	
Satd. Flow (prot)		1830			1843	1583		1854	1583		1829	
Flt Permitted		0.98			0.88	1.00		0.97	1.00		0.89	
Satd. Flow (perm)		1802			1639	1583		1799	1583		1641	
Volume (vph)	10	215	30	75	280	35	10	100	70	60	170	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	239	33	83	311	39	11	111	78	67	189	11
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	58	0	0	0
Lane Group Flow (vph)	0	283	0	0	394	19	0	122	20	0	267	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		21.8			21.8	21.8		11.1	11.1		11.1	
Effective Green, g (s)		22.8			22.8	22.8		12.1	12.1		12.1	
Actuated g/C Ratio		0.48			0.48	0.48		0.25	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)		861			783	757		456	402		416	
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.24	0.01		0.07	0.01		c0.16	
v/c Ratio		0.33			0.50	0.02		0.27	0.05		0.64	
Uniform Delay, d1		7.7			8.6	6.6		14.3	13.5		15.9	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.2			0.5	0.0		0.3	0.1		3.4	
Delay (s)		7.9			9.1	6.6		14.6	13.5		19.2	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		7.9			8.8			14.2			19.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	1863	1583	1770	1863	1764	
Flt Permitted	1.00	1.00	0.31	1.00	0.96	
Satd. Flow (perm)	1863	1583	569	1863	1764	
Volume (vph)	530	250	20	640	450	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	589	278	22	711	500	33
RTOR Reduction (vph)	0	26	0	0	2	0
Lane Group Flow (vph)	589	252	22	711	531	0
Turn Type	Prot		Perm			
Protected Phases	2	8		6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	73.4	113.8	73.4	73.4	40.4	
Effective Green, g (s)	74.4	115.8	74.4	74.4	41.4	
Actuated g/C Ratio	0.57	0.89	0.57	0.57	0.32	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1066	1459	326	1066	562	
v/s Ratio Prot	0.32	0.05		c0.38	c0.30	
v/s Ratio Perm		0.10	0.04			
v/c Ratio	0.55	0.17	0.07	0.67	0.94	
Uniform Delay, d1	17.4	0.9	12.4	19.2	43.2	
Progression Factor	1.04	0.00	1.34	1.00	1.00	
Incremental Delay, d2	1.8	0.1	0.3	2.9	24.8	
Delay (s)	19.9	0.1	16.9	22.2	68.0	
Level of Service	B	A	B	C	E	
Approach Delay (s)	13.5			22.1	68.0	
Approach LOS	B			C	E	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.23	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	407	1863	1801	1583
Volume (vph)	415	60	15	380	540	665
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	461	67	17	422	600	739
RTOR Reduction (vph)	0	36	0	0	0	0
Lane Group Flow (vph)	461	31	17	422	600	739
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	52.8	52.8	61.0	61.0	61.0	61.0
Effective Green, g (s)	53.8	53.8	62.0	62.0	62.0	62.0
Actuated g/C Ratio	0.41	0.41	0.48	0.48	0.48	0.48
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)	708	655	194	889	859	755
v/s Ratio Prot	c0.27	0.02		0.23	0.33	
v/s Ratio Perm			0.04			c0.47
v/c Ratio	0.65	0.05	0.09	0.47	0.70	0.98
Uniform Delay, d1	30.6	22.8	18.6	23.0	26.7	33.4
Progression Factor	0.66	0.70	1.00	1.00	0.86	0.86
Incremental Delay, d2	4.3	0.1	0.9	1.8	1.9	23.5
Delay (s)	24.4	16.1	19.4	24.8	24.8	52.3
Level of Service	C	B	B	C	C	D
Approach Delay (s)	23.3			24.6	40.0	
Approach LOS	C			C	D	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

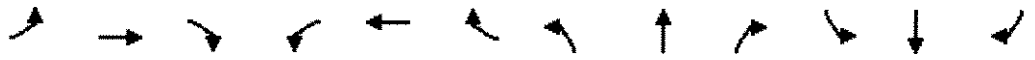
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.91			0.98		1.00	0.98	
Flt Protected		0.99			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		1924			1807			1935		1711	1763	
Flt Permitted		0.83			0.96			0.94		0.57	1.00	
Satd. Flow (perm)		1612			1747			1822		1021	1763	
Volume (vph)	40	85	20	25	80	190	15	95	20	185	245	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	94	22	28	89	211	17	106	22	206	272	44
RTOR Reduction (vph)	0	8	0	0	88	0	0	9	0	0	7	0
Lane Group Flow (vph)	0	152	0	0	240	0	0	136	0	206	309	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.8			11.8			11.6		22.8	22.8	
Effective Green, g (s)		12.8			12.8			12.6		23.8	23.8	
Actuated g/C Ratio		0.27			0.27			0.27		0.50	0.50	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		436			473			485		619	887	
v/s Ratio Prot										0.05	c0.18	
v/s Ratio Perm		0.09			c0.14			0.07		0.12		
v/c Ratio		0.35			0.51			0.28		0.33	0.35	
Uniform Delay, d1		13.9			14.6			13.8		7.0	7.1	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.5			0.9			0.3		0.3	0.2	
Delay (s)		14.4			15.5			14.1		7.4	7.3	
Level of Service		B			B			B		A	A	
Approach Delay (s)		14.4			15.5			14.1			7.3	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	160	350	595	80	165	320
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	178	389	661	89	183	356
RTOR Reduction (vph)	0	210	0	0	0	87
Lane Group Flow (vph)	178	179	661	89	183	269
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	16.7	57.7	51.1	72.8	41.0	97.1
Effective Green, g (s)	17.7	59.7	52.1	73.8	42.0	98.1
Actuated g/C Ratio	0.14	0.46	0.40	0.57	0.32	0.75
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	254	727	709	1058	572	1195
v/s Ratio Prot	c0.10	0.08	c0.37	0.05	c0.10	0.17
v/s Ratio Perm		0.03				
v/c Ratio	0.70	0.25	0.93	0.08	0.32	0.22
Uniform Delay, d1	53.6	21.4	37.3	12.8	33.2	4.7
Progression Factor	1.00	1.00	0.18	0.02	0.97	6.21
Incremental Delay, d2	8.4	0.2	7.6	0.0	1.4	0.1
Delay (s)	62.1	21.6	14.3	0.2	33.5	29.4
Level of Service	E	C	B	A	C	C
Approach Delay (s)	34.3			12.6	30.8	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

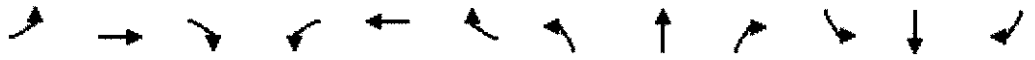


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.88			0.98		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1630			1761		1770	1833		1770	1860	
Flt Permitted		0.97			0.53		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1591			962		1770	1833		1770	1860	
Volume (vph)	10	0	80	35	10	10	5	465	55	15	920	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	0	89	39	11	11	6	517	61	17	1022	11
RTOR Reduction (vph)	0	81	0	0	6	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	19	0	0	55	0	6	576	0	17	1033	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		11.4			11.4		1.6	94.2		3.2	95.8	
Effective Green, g (s)		12.4			12.4		2.6	95.2		4.2	96.8	
Actuated g/C Ratio		0.10			0.10		0.02	0.73		0.03	0.74	
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)		152			92		35	1342		57	1385	
v/s Ratio Prot							0.00	0.31		c0.01	c0.56	
v/s Ratio Perm		0.01			c0.06							
v/c Ratio		0.13			0.59		0.17	0.43		0.30	0.75	
Uniform Delay, d1		53.8			56.4		62.6	6.8		61.5	9.5	
Progression Factor		1.00			1.00		0.88	1.31		1.20	0.58	
Incremental Delay, d2		0.4			8.8		2.0	0.9		1.9	2.5	
Delay (s)		54.2			65.4		57.2	9.7		75.9	8.0	
Level of Service		D			E		E	A		E	A	
Approach Delay (s)		54.2			65.4			10.2			9.1	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.99		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1765			1819		1770	1859		1770	1848	
Flt Permitted		0.74			0.85		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1327			1556		1770	1859		1770	1848	
Volume (vph)	110	130	90	25	100	15	80	400	5	10	975	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	144	100	28	111	17	89	444	6	11	1083	61
RTOR Reduction (vph)	0	11	0	0	3	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	355	0	0	153	0	89	450	0	11	1143	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		30.0			30.0		10.8	77.2		1.6	68.0	
Effective Green, g (s)		31.0			31.0		11.8	78.2		2.6	69.0	
Actuated g/C Ratio		0.24			0.24		0.09	0.60		0.02	0.53	
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)		316			371		161	1118		35	981	
v/s Ratio Prot							c0.05	0.24		0.01	c0.62	
v/s Ratio Perm		c0.27			0.10							
v/c Ratio		1.12			0.41		0.55	0.40		0.31	1.16	
Uniform Delay, d1		49.5			41.8		56.6	13.6		62.8	30.5	
Progression Factor		1.00			1.00		0.95	1.29		1.27	0.44	
Incremental Delay, d2		88.6			0.7		3.7	1.0		3.7	82.6	
Delay (s)		138.1			42.6		57.7	18.6		83.4	96.1	
Level of Service		F			D		E	B		F	F	
Approach Delay (s)		138.1			42.6			25.1			96.0	
Approach LOS		F			D			C			F	

Intersection Summary			
HCM Average Control Delay	81.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



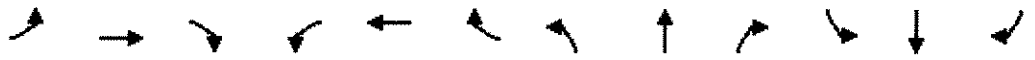
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.97		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1792	1583		1797		1770	1814		1770	1849	
Flt Permitted		0.68	1.00		0.64		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1260	1583		1192		1770	1814		1770	1849	
Volume (vph)	75	20	130	95	50	5	105	405	85	5	1025	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	22	144	106	56	6	117	450	94	6	1139	61
RTOR Reduction (vph)	0	0	122	0	1	0	0	4	0	0	1	0
Lane Group Flow (vph)	0	105	22	0	167	0	117	540	0	6	1199	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		19.2	19.2		19.2		12.7	88.0		1.6	76.9	
Effective Green, g (s)		20.2	20.2		20.2		13.7	89.0		2.6	77.9	
Actuated g/C Ratio		0.16	0.16		0.16		0.11	0.68		0.02	0.60	
Clearance Time (s)		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	
Lane Grp Cap (vph)		196	246		185		187	1242		35	1108	
v/s Ratio Prot							c0.07	0.30		0.00	c0.65	
v/s Ratio Perm		0.08	0.01		c0.14							
v/c Ratio		0.54	0.09		0.90		0.63	0.43		0.17	1.08	
Uniform Delay, d1		50.6	47.0		53.9		55.7	9.2		62.6	26.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.18	0.17	
Incremental Delay, d2		2.8	0.2		39.9		6.4	1.1		0.2	38.7	
Delay (s)		53.4	47.2		93.8		62.1	10.3		74.4	43.2	
Level of Service		D	D		F		E	B		E	D	
Approach Delay (s)		49.8			93.8			19.5			43.4	
Approach LOS		D			F			B			D	

Intersection Summary			
HCM Average Control Delay	40.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	88.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	120	80	50	165	15	5	160	25	25	240	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	133	89	56	183	17	6	178	28	28	267	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	228	256	211	306
Volume Left (vph)	6	56	6	28
Volume Right (vph)	89	17	28	11
Hadj (s)	-0.20	0.04	-0.04	0.03
Departure Headway (s)	5.8	5.9	5.9	5.8
Degree Utilization, x	0.36	0.42	0.35	0.49
Capacity (veh/h)	560	553	543	575
Control Delay (s)	12.0	13.1	12.0	14.2
Approach Delay (s)	12.0	13.1	12.0	14.2
Approach LOS	B	B	B	B

Intersection Summary			
Delay	13.0		
HCM Level of Service	B		
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	130	50	50	125	5	55	175	55	15	345	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	144	56	56	139	6	61	194	61	17	383	11

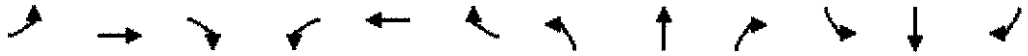
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	211	200	317	411
Volume Left (vph)	11	56	61	17
Volume Right (vph)	56	6	61	11
Hadj (s)	-0.11	0.07	-0.04	0.03
Departure Headway (s)	6.5	6.7	6.1	6.0
Degree Utilization, x	0.38	0.37	0.54	0.68
Capacity (veh/h)	478	462	546	566
Control Delay (s)	13.5	13.7	15.9	20.9
Approach Delay (s)	13.5	13.7	15.9	20.9
Approach LOS	B	B	C	C

Intersection Summary			
Delay	16.9		
HCM Level of Service	C		
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	70	10	10	105	110	5	20	15	135	45	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	78	11	11	117	122	6	22	17	150	50	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	94	250	44	211
Volume Left (vph)	6	11	6	150
Volume Right (vph)	11	122	17	11
Hadj (s)	-0.02	-0.25	-0.17	0.14
Departure Headway (s)	4.8	4.4	4.8	4.9
Degree Utilization, x	0.13	0.31	0.06	0.29
Capacity (veh/h)	688	766	673	685
Control Delay (s)	8.5	9.4	8.2	9.9
Approach Delay (s)	8.5	9.4	8.2	9.9
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.3		
HCM Level of Service	A		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	20	25	5	30	15	780	50	50	1180	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	22	28	6	33	17	867	56	56	1311	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1247	
pX, platoon unblocked	0.73	0.73	0.73	0.73	0.73		0.73					
vC, conflicting volume	2392	2383	1317	2381	2361	894	1322			922		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2897	2886	1432	2882	2856	894	1439			922		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	47	82	0	49	90	95			92		
cM capacity (veh/h)	4	10	121	3	11	340	346			741		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	39	67	939	1378
Volume Left	11	28	17	56
Volume Right	22	33	56	11
cSH	10	7	346	741
Volume to Capacity	3.78	9.13	0.05	0.08
Queue Length 95th (ft)	Err	Err	4	6
Control Delay (s)	Err	Err	1.9	3.7
Lane LOS	F	F	A	A
Approach Delay (s)	Err	Err	1.9	3.7
Approach LOS	F	F		

Intersection Summary			
Average Delay	438.6		
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	35	50	760	40	70	1170
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	56	844	44	78	1300
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	2322	867			889	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2570	842			868	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	82			88	
cM capacity (veh/h)	21	307			654	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	889	1378
Volume Left	39	0	78
Volume Right	56	44	0
cSH	47	1700	654
Volume to Capacity	2.01	0.52	0.12
Queue Length 95th (ft)	241	0	10
Control Delay (s)	658.7	0.0	6.0
Lane LOS	F		A
Approach Delay (s)	658.7	0.0	6.0
Approach LOS	F		

Intersection Summary			
Average Delay	29.9		
Intersection Capacity Utilization	122.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	30	55	350	10	55	505
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	61	389	11	61	561
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.74					
vC, conflicting volume	1078	394			400	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1105	394			400	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	80	91			95	
cM capacity (veh/h)	163	655			1159	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	400	622
Volume Left	33	0	61
Volume Right	61	11	0
cSH	317	1700	1159
Volume to Capacity	0.30	0.24	0.05
Queue Length 95th (ft)	31	0	4
Control Delay (s)	21.1	0.0	1.4
Lane LOS	C		A
Approach Delay (s)	21.1	0.0	1.4
Approach LOS	C		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	55	15	10	285	485	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	17	11	317	539	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.77	0.77	0.77			
vC, conflicting volume	903	564	589			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	873	430	463			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	75	97	99			
cM capacity (veh/h)	242	478	841			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	328	589
Volume Left	61	11	0
Volume Right	17	0	50
cSH	271	841	1700
Volume to Capacity	0.29	0.01	0.35
Queue Length 95th (ft)	29	1	0
Control Delay (s)	23.6	0.5	0.0
Lane LOS	C	A	
Approach Delay (s)	23.6	0.5	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

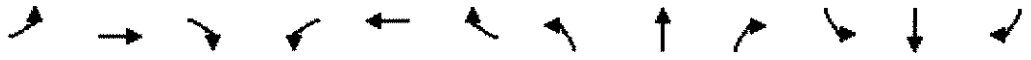
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			1.00			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1839		1770	1784			1961			1762	
Flt Permitted	0.25	1.00		0.34	1.00			0.90			0.94	
Satd. Flow (perm)	452	1839		636	1784			1779			1669	
Volume (vph)	60	380	35	60	465	30	50	235	10	35	250	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	422	39	67	517	33	56	261	11	39	278	44
RTOR Reduction (vph)	0	5	0	0	3	0	0	1	0	0	5	0
Lane Group Flow (vph)	67	456	0	67	547	0	0	327	0	0	356	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	21.0	21.0		21.0	21.0			17.9			17.9	
Effective Green, g (s)	22.0	22.0		22.0	22.0			18.9			18.9	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.35			0.35	
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)	185	753		261	731			626			587	
v/s Ratio Prot		0.25			c0.31							
v/s Ratio Perm	0.15			0.11				0.18			c0.21	
v/c Ratio	0.36	0.61		0.26	0.75			0.52			0.61	
Uniform Delay, d1	11.0	12.4		10.5	13.5			13.8			14.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	1.4		0.5	4.2			0.8			1.8	
Delay (s)	12.2	13.8		11.0	17.7			14.6			16.1	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		13.6			17.0			14.6			16.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

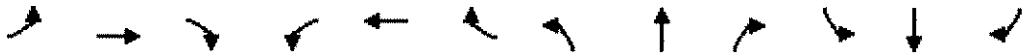
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1881		1652	1776				
Flt Permitted	0.27	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	544	1739			1881		1652	1776				
Volume (vph)	40	460	0	0	505	40	65	255	25	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	511	0	0	561	44	72	283	28	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	3	0	0	0	0
Lane Group Flow (vph)	44	511	0	0	601	0	72	308	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	22.3	22.3			22.3		13.6	13.6				
Effective Green, g (s)	23.3	23.3			23.3		14.6	14.6				
Actuated g/C Ratio	0.48	0.48			0.48		0.30	0.30				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	262	839			907		499	537				
v/s Ratio Prot		0.29			c0.32			c0.17				
v/s Ratio Perm	0.08						0.04					
v/c Ratio	0.17	0.61			0.66		0.14	0.57				
Uniform Delay, d1	7.0	9.2			9.5		12.3	14.2				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.3	1.3			1.8		0.1	1.5				
Delay (s)	7.3	10.4			11.3		12.4	15.7				
Level of Service	A	B			B		B	B				
Approach Delay (s)		10.2			11.3			15.1			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



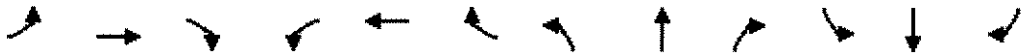
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1659		1711	1801	1531		1583		1652	1739	1583
Flt Permitted	0.42	1.00		0.51	1.00	1.00		0.38		0.86	1.00	1.00
Satd. Flow (perm)	682	1659		913	1801	1531		596		1503	1739	1583
Volume (vph)	110	260	20	70	350	160	5	35	25	225	285	85
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	289	22	78	389	178	6	39	28	250	317	94
RTOR Reduction (vph)	0	3	0	0	0	105	0	24	0	0	0	62
Lane Group Flow (vph)	122	308	0	78	389	73	0	49	0	250	317	32
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	20.9	20.9		20.6	20.6	20.6		4.8		16.8	16.8	16.8
Effective Green, g (s)	21.9	21.9		21.6	21.6	21.6		5.8		17.8	17.8	17.8
Actuated g/C Ratio	0.42	0.42		0.41	0.41	0.41		0.11		0.34	0.34	0.34
Clearance Time (s)	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
Lane Grp Cap (vph)	283	689		374	738	628		66		530	587	535
v/s Ratio Prot		0.19			c0.22					0.07	c0.18	
v/s Ratio Perm	0.18			0.09		0.05		c0.08		0.09		0.02
v/c Ratio	0.43	0.45		0.21	0.53	0.12		0.74		0.47	0.54	0.06
Uniform Delay, d1	11.0	11.1		10.0	11.7	9.6		22.7		14.2	14.1	11.8
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.5		0.3	0.7	0.1		35.7		0.7	1.0	0.0
Delay (s)	12.0	11.5		10.3	12.4	9.7		58.5		14.8	15.2	11.8
Level of Service	B	B		B	B	A		E		B	B	B
Approach Delay (s)		11.7			11.4			58.5			14.6	
Approach LOS		B			B			E			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1733	1478	1486	1525			1823	1794	1593	1840	
Flt Permitted		0.97	1.00	0.55	1.00			0.82	1.00	0.65	1.00	
Satd. Flow (perm)		1681	1478	859	1525			1531	1794	1093	1840	
Volume (vph)	15	245	85	55	315	65	65	85	60	105	110	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	272	94	61	350	72	72	94	67	117	122	11
RTOR Reduction (vph)	0	0	43	0	9	0	0	0	41	0	3	0
Lane Group Flow (vph)	0	289	51	61	413	0	0	166	26	117	130	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		17.1	17.1	17.1	17.1			12.4	12.4	12.4	12.4	
Effective Green, g (s)		18.1	18.1	18.1	18.1			13.4	13.4	13.4	13.4	
Actuated g/C Ratio		0.41	0.41	0.41	0.41			0.30	0.30	0.30	0.30	
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)		684	601	349	620			461	540	329	554	
v/s Ratio Prot					c0.27						0.07	
v/s Ratio Perm		0.17	0.03	0.07				c0.11	0.01	0.11		
v/c Ratio		0.42	0.08	0.17	0.67			0.36	0.05	0.36	0.24	
Uniform Delay, d1		9.5	8.1	8.4	10.7			12.2	11.0	12.2	11.7	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.1	0.2	2.7			0.5	0.0	0.7	0.2	
Delay (s)		9.9	8.2	8.7	13.5			12.7	11.1	12.8	11.9	
Level of Service		A	A	A	B			B	B	B	B	
Approach Delay (s)		9.5			12.8			12.2			12.3	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	44.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			1.00			0.99	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1794			1926			1853			2093	
Flt Permitted		0.94			0.89			0.98			0.99	
Satd. Flow (perm)		1708			1747			1816			2080	
Volume (vph)	15	45	15	20	30	5	15	270	5	5	245	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	17	22	33	6	17	300	6	6	272	17
RTOR Reduction (vph)	0	11	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	73	0	0	61	0	0	322	0	0	293	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		342			349			704			806	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			c0.18			0.14	
v/c Ratio		0.21			0.17			0.46			0.36	
Uniform Delay, d1		26.7			26.5			18.2			17.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.1			2.1			1.3	
Delay (s)		28.2			27.6			20.4			18.7	
Level of Service		C			C			C			B	
Approach Delay (s)		28.2			27.6			20.4			18.7	
Approach LOS		C			C			C			B	

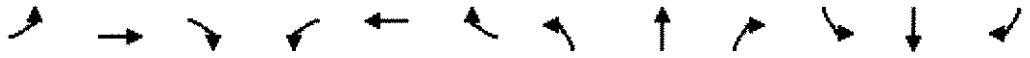
Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.95		
Satd. Flow (prot)	1888	1884		
Flt Permitted	0.95	0.95		
Satd. Flow (perm)	1888	1884		
Volume (vph)	15	345	10	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	383	11	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	399	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	495		
v/s Ratio Prot	0.01	c0.21		
v/s Ratio Perm				
v/c Ratio	0.03	0.81		
Uniform Delay, d1	22.0	27.6		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	13.2		
Delay (s)	22.1	40.8		
Level of Service	C	D		
Approach Delay (s)		40.0		
Approach LOS		D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1583		1808	1583	1770	3534		1770	3499	
Flt Permitted		0.75	1.00		0.78	1.00	0.19	1.00		0.25	1.00	
Satd. Flow (perm)		1393	1583		1460	1583	345	3534		470	3499	
Volume (vph)	55	20	160	30	20	35	140	1005	10	30	855	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	22	178	33	22	39	156	1117	11	33	950	78
RTOR Reduction (vph)	0	0	153	0	0	34	0	1	0	0	8	0
Lane Group Flow (vph)	0	83	25	0	55	5	156	1127	0	33	1020	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		8.1	8.1		8.1	8.1	41.7	41.7		30.7	30.7	
Effective Green, g (s)		8.1	8.1		8.1	8.1	41.7	41.7		30.7	30.7	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.72	0.72		0.53	0.53	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		195	222		205	222	421	2550		250	1858	
v/s Ratio Prot							0.04	c0.32			c0.29	
v/s Ratio Perm		c0.06	0.02		0.04	0.00	0.22			0.07		
v/c Ratio		0.43	0.11		0.27	0.02	0.37	0.44		0.13	0.55	
Uniform Delay, d1		22.7	21.7		22.2	21.4	4.1	3.3		6.8	9.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5	0.2		0.7	0.0	0.6	0.1		0.2	0.3	
Delay (s)		24.2	21.9		22.9	21.5	4.7	3.4		7.1	9.3	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		22.7			22.3			3.6			9.2	
Approach LOS		C			C			A			A	

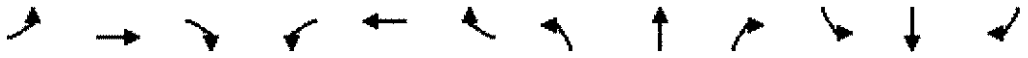
Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1478	1770	1909		1652	3297		1652	3295	
Flt Permitted		0.79	1.00	0.71	1.00		0.22	1.00		0.95	1.00	
Satd. Flow (perm)		1415	1478	1329	1909		382	3297		1652	3295	
Volume (vph)	35	25	165	30	20	35	195	1205	15	40	915	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	28	183	33	22	39	217	1339	17	44	1017	17
RTOR Reduction (vph)	0	0	162	0	35	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	67	21	33	26	0	217	1355	0	44	1033	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.7	7.7	7.7	7.7		41.5	41.5		3.6	28.3	
Effective Green, g (s)		7.7	7.7	7.7	7.7		42.5	42.5		3.6	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.62	0.62		0.05	0.43	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		160	167	150	215		550	2052		87	1414	
v/s Ratio Prot					0.01		0.10	c0.41		0.03	c0.31	
v/s Ratio Perm		c0.05	0.01	0.02			0.15					
v/c Ratio		0.42	0.12	0.22	0.12		0.39	0.66		0.51	0.73	
Uniform Delay, d1		28.2	27.3	27.6	27.3		11.9	8.3		31.5	16.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.1	0.3	0.1		2.1	1.7		1.7	3.4	
Delay (s)		28.9	27.4	27.8	27.4		14.0	10.0		33.2	19.6	
Level of Service		C	C	C	C		B	A		C	B	
Approach Delay (s)		27.8			27.5			10.5			20.1	
Approach LOS		C			C			B			C	

Intersection Summary				
HCM Average Control Delay	16.0	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	68.3	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1699			3539			3537	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1699			3539			3537	
Volume (vph)	0	0	0	1445	140	0	0	750	0	0	1420	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1606	156	0	0	833	0	0	1578	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	858	904	0	0	833	0	0	1583	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			30.0			30.0	
Effective Green, g (s)				30.0	30.0			32.0			32.0	
Actuated g/C Ratio				0.43	0.43			0.46			0.46	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				720	728			1618			1617	
v/s Ratio Prot								0.24			c0.45	
v/s Ratio Perm				0.51	0.53							
v/c Ratio				1.19	1.24			0.51			0.98	
Uniform Delay, d1				20.0	20.0			13.5			18.7	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				99.7	120.3			0.3			17.4	
Delay (s)				119.7	140.3			13.8			36.1	
Level of Service				F	F			B			D	
Approach Delay (s)		0.0			130.3			13.8			36.1	
Approach LOS		A			F			B			D	

Intersection Summary			
HCM Average Control Delay	71.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	135	60	75	110	15	20	275	65	55	260	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	150	67	83	122	17	22	306	72	61	289	28

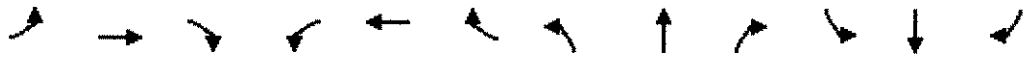
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	239	222	400	378
Volume Left (vph)	22	83	22	61
Volume Right (vph)	67	17	72	28
Hadj (s)	-0.11	0.06	-0.06	0.02
Departure Headway (s)	7.0	7.2	6.4	6.6
Degree Utilization, x	0.47	0.45	0.72	0.69
Capacity (veh/h)	445	431	532	516
Control Delay (s)	16.0	16.0	24.0	22.8
Approach Delay (s)	16.0	16.0	24.0	22.8
Approach LOS	C	C	C	C

Intersection Summary			
Delay	20.7		
HCM Level of Service	C		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	150	5	380	215	5	625
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	167	6	422	239	6	694
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.93					
vC, conflicting volume	1247	542			661	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1264	542			661	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	4	99			99	
cM capacity (veh/h)	174	541			927	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	172	661	700
Volume Left	167	0	6
Volume Right	6	239	0
cSH	178	1700	927
Volume to Capacity	0.97	0.39	0.01
Queue Length 95th (ft)	193	0	0
Control Delay (s)	112.8	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	112.8	0.0	0.2
Approach LOS	F		

Intersection Summary			
Average Delay	12.7		
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	0	60	10	0	10	55	1005	5	5	905	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	0	67	11	0	11	61	1117	6	6	1006	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1725	2278	519	1822	2292	561	1039			1122		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1725	2278	519	1822	2292	561	1039			1122		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	24	100	87	71	100	98	91			99		
cM capacity (veh/h)	51	35	501	39	35	471	665			618		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	106	22	619	564	508	536
Volume Left	39	11	61	0	6	0
Volume Right	67	11	0	6	0	33
cSH	119	71	665	1700	618	1700
Volume to Capacity	0.89	0.31	0.09	0.33	0.01	0.32
Queue Length 95th (ft)	138	29	8	0	1	0
Control Delay (s)	123.1	76.8	2.4	0.0	0.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	123.1	76.8	1.3		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	72.1%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	155	25	40	170	35	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	172	28	44	189	39	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			200		464	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200		464	186
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	91
cM capacity (veh/h)			1372		538	856

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	200	233	117
Volume Left	0	44	39
Volume Right	28	0	78
cSH	1700	1372	715
Volume to Capacity	0.12	0.03	0.16
Queue Length 95th (ft)	0	3	15
Control Delay (s)	0.0	1.7	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	11.0
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*625*	*280*	*40*	*715*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*694*	*311*	*44*	*794*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*55*	*0*	*25*	*75*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*61*	*0*	*27*	*83*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*44*			*61*			*110*
C (m) (vph)		*685*			*515*			*158*
v/c		*0.06*			*0.12*			*0.70*
95% queue length		*0.21*			*0.40*			*4.09*
Control Delay		*10.6*			*12.9*			*68.1*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*12.9*			*68.1*		
Approach LOS	--	--	*B*			*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*545*	*0*	*0*	*770*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*605*	*0*	*0*	*855*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*165*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*183*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*88*				*183*			
C (m) (vph)	*785*				*83*			
v/c	*0.11*				*2.20*			
95% queue length	*0.38*				*16.63*			
Control Delay	*10.2*				*660.8*			
LOS	*B*				*F*			
Approach Delay	--	--	*660.8*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 2

AND

C-1 SECTION & C-2 SECTION ONLY

2008 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1828	1583		1819	1583		3490		1770	1856	
Flt Permitted		0.91	1.00		0.86	1.00		0.84		0.95	1.00	
Satd. Flow (perm)		1688	1583		1605	1583		2935		1770	1856	
Volume (vph)	15	25	25	50	55	125	40	350	25	285	575	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	28	28	56	61	139	44	389	28	317	639	17
RTOR Reduction (vph)	0	0	18	0	0	58	0	0	0	0	0	0
Lane Group Flow (vph)	0	45	10	0	117	81	0	461	0	317	656	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		30.6	30.6		30.6	50.7		18.1		20.1	43.2	
Effective Green, g (s)		31.6	31.6		31.6	52.7		19.1		21.1	44.2	
Actuated g/C Ratio		0.35	0.35		0.35	0.59		0.21		0.23	0.49	
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)		593	556		564	927		623		415	912	
v/s Ratio Prot			0.01			0.05				0.18	c0.35	
v/s Ratio Perm		0.03			c0.07			0.16				
v/c Ratio		0.08	0.02		0.21	0.09		0.74		0.76	0.72	
Uniform Delay, d1		19.5	19.1		20.4	8.1		33.1		32.1	18.0	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.1		0.8	0.0		4.6		8.1	2.7	
Delay (s)		19.7	19.1		21.3	8.2		37.7		40.3	20.8	
Level of Service		B	B		C	A		D		D	C	
Approach Delay (s)		19.5			14.2			37.7			27.1	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	65.1%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.88			0.99			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.98	
Satd. Flow (prot)	1770	1825			1642			1850			1814	
Flt Permitted	0.39	1.00			0.99			0.97			0.75	
Satd. Flow (perm)	731	1825			1623			1806			1379	
Volume (vph)	20	35	5	10	15	155	10	240	10	270	350	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	39	6	11	17	172	11	267	11	300	389	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	45	0	0	200	0	0	289	0	0	722	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.4	15.4			15.4			65.4			65.4	
Effective Green, g (s)	16.4	16.4			16.4			66.4			66.4	
Actuated g/C Ratio	0.18	0.18			0.18			0.73			0.73	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	132	330			293			1321			1008	
v/s Ratio Prot		0.02										
v/s Ratio Perm	0.03				c0.12			0.16			c0.52	
v/c Ratio	0.17	0.14			0.68			0.22			0.72	
Uniform Delay, d1	31.4	31.3			34.8			3.9			6.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.6	0.2			6.4			0.4			4.4	
Delay (s)	32.0	31.4			41.2			4.3			11.2	
Level of Service	C	C			D			A			B	
Approach Delay (s)		31.6			41.2			4.3			11.2	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

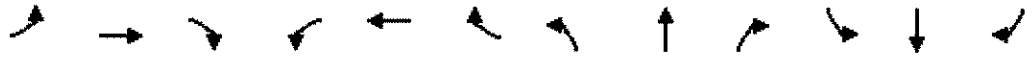
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.90			0.98			0.99	
Flt Protected		0.97			0.99			0.99			0.96	
Satd. Flow (prot)		1729			1611			1742			1710	
Flt Permitted		0.80			0.95			0.85			0.70	
Satd. Flow (perm)		1419			1546			1499			1248	
Volume (vph)	35	20	5	40	35	205	5	20	5	275	50	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	22	6	44	39	228	6	22	6	306	56	44
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	67	0	0	311	0	0	34	0	0	406	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.9			15.9			5.5			25.6	
Effective Green, g (s)		16.9			16.9			6.5			26.6	
Actuated g/C Ratio		0.33			0.33			0.13			0.52	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		466			507			189			789	
v/s Ratio Prot											c0.16	
v/s Ratio Perm		0.05			c0.20			0.02			c0.10	
v/c Ratio		0.14			0.61			0.18			0.51	
Uniform Delay, d1		12.2			14.6			20.1			8.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			2.2			0.5			0.6	
Delay (s)		12.3			16.8			20.6			8.8	
Level of Service		B			B			C			A	
Approach Delay (s)		12.3			16.8			20.6			8.8	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

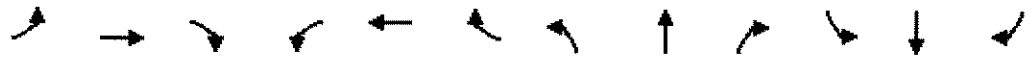
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.94			1.00	0.85		1.00	0.85		0.98	
Flt Protected		1.00			1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1736			1859	1583		1812	1583		1811	
Flt Permitted		0.94			0.98	1.00		0.63	1.00		0.88	
Satd. Flow (perm)		1644			1819	1583		1178	1583		1613	
Volume (vph)	40	180	195	10	245	60	205	160	20	45	185	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	200	217	11	272	67	228	178	22	50	206	44
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	12	0	0	0
Lane Group Flow (vph)	0	461	0	0	283	25	0	406	10	0	300	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		29.4			29.4	29.4		38.4	38.4		38.4	
Effective Green, g (s)		33.4			33.4	33.4		42.4	42.4		42.4	
Actuated g/C Ratio		0.37			0.37	0.37		0.47	0.47		0.47	
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)		610			675	587		555	746		760	
v/s Ratio Prot												
v/s Ratio Perm		c0.28			0.16	0.02		c0.34	0.01		0.19	
v/c Ratio		0.76			0.42	0.04		0.73	0.01		0.39	
Uniform Delay, d1		24.7			21.1	18.1		19.2	12.7		15.5	
Progression Factor		1.00			1.00	1.00		0.73	0.97		1.00	
Incremental Delay, d2		5.3			0.4	0.0		7.2	0.0		0.3	
Delay (s)		30.0			21.5	18.1		21.3	12.3		15.8	
Level of Service		C			C	B		C	B		B	
Approach Delay (s)		30.0			20.9			20.9			15.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.98			1.00	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1705			1803			1820			1855	
Flt Permitted		0.99			0.63			0.88			0.97	
Satd. Flow (perm)		1690			1152			1619			1796	
Volume (vph)	10	100	175	35	100	25	70	350	55	20	365	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	111	194	39	111	28	78	389	61	22	406	6
RTOR Reduction (vph)	0	66	0	0	8	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	250	0	0	170	0	0	525	0	0	434	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.3			16.3			57.5			57.5	
Effective Green, g (s)		17.3			17.3			58.5			58.5	
Actuated g/C Ratio		0.19			0.19			0.65			0.65	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		325			221			1052			1167	
v/s Ratio Prot												
v/s Ratio Perm		c0.15			0.15			c0.32			0.24	
v/c Ratio		0.77			0.77			0.50			0.37	
Uniform Delay, d1		34.5			34.5			8.2			7.3	
Progression Factor		1.00			1.00			0.14			0.79	
Incremental Delay, d2		10.4			14.8			0.5			0.7	
Delay (s)		44.9			49.3			1.7			6.5	
Level of Service		D			D			A			A	
Approach Delay (s)		44.9			49.3			1.7			6.5	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	77.8%	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		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	12	11	12	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.89			0.99			0.99			1.00	
Flt Protected		1.00			0.98			0.99			1.00	
Satd. Flow (prot)		1603			1751			1765			1797	
Flt Permitted		0.99			0.49			0.81			0.99	
Satd. Flow (perm)		1596			870			1445			1777	
Volume (vph)	5	55	250	80	100	10	100	460	55	10	560	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	61	278	89	111	11	111	511	61	11	622	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	345	0	0	211	0	0	683	0	0	639	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		21.8			21.8			52.0			52.0	
Effective Green, g (s)		22.8			22.8			53.0			53.0	
Actuated g/C Ratio		0.25			0.25			0.59			0.59	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		404			220			851			1046	
v/s Ratio Prot												
v/s Ratio Perm		0.22			c0.24			c0.47			0.36	
v/c Ratio		0.85			0.96			0.80			0.61	
Uniform Delay, d1		32.0			33.1			14.4			11.9	
Progression Factor		1.00			1.00			1.00			0.75	
Incremental Delay, d2		15.9			48.5			7.9			2.3	
Delay (s)		47.9			81.7			22.3			11.3	
Level of Service		D			F			C			B	
Approach Delay (s)		47.9			81.7			22.3			11.3	
Approach LOS		D			F			C			B	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		

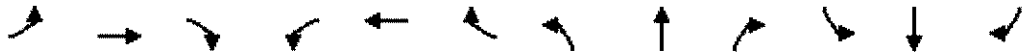
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1828	1583		1819	1583		3490		1770	1856	
Flt Permitted		0.85	1.00		0.83	1.00		0.84		0.95	1.00	
Satd. Flow (perm)		1576	1583		1537	1583		2952		1770	1856	
Volume (vph)	15	25	25	50	55	125	40	350	25	210	650	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	28	28	56	61	139	44	389	28	233	722	17
RTOR Reduction (vph)	0	0	24	0	0	84	0	0	0	0	0	0
Lane Group Flow (vph)	0	45	4	0	117	55	0	461	0	233	739	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		7.1	7.1		7.1	19.3		14.7		12.2	31.9	
Effective Green, g (s)		8.1	8.1		8.1	21.3		15.7		13.2	32.9	
Actuated g/C Ratio		0.15	0.15		0.15	0.40		0.29		0.25	0.61	
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)		237	238		231	627		861		434	1135	
v/s Ratio Prot			0.00			0.03				0.13	c0.40	
v/s Ratio Perm		0.03			c0.08			0.16				
v/c Ratio		0.19	0.02		0.51	0.09		0.54		0.54	0.65	
Uniform Delay, d1		20.0	19.5		21.0	10.2		16.0		17.6	6.7	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		1.7	0.1		0.6		1.3	1.3	
Delay (s)		20.4	19.5		22.8	10.2		16.6		18.9	8.1	
Level of Service		C	B		C	B		B		B	A	
Approach Delay (s)		20.0			16.0			16.6			10.7	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.89			1.00			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1825			1651			1851			1828	
Flt Permitted	0.46	1.00			0.98			0.97			0.80	
Satd. Flow (perm)	852	1825			1624			1808			1488	
Volume (vph)	20	35	5	10	15	115	10	280	10	195	500	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	39	6	11	17	128	11	311	11	217	556	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	45	0	0	156	0	0	333	0	0	806	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.8	13.8			13.8			69.1			69.1	
Effective Green, g (s)	14.8	14.8			14.8			70.1			70.1	
Actuated g/C Ratio	0.16	0.16			0.16			0.75			0.75	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	136	291			259			1364			1123	
v/s Ratio Prot		0.02										
v/s Ratio Perm	0.03				c0.10			0.18			c0.54	
v/c Ratio	0.16	0.15			0.60			0.24			0.72	
Uniform Delay, d1	33.7	33.7			36.3			3.4			6.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.6	0.2			3.9			0.4			4.0	
Delay (s)	34.3	33.9			40.2			3.9			10.1	
Level of Service	C	C			D			A			B	
Approach Delay (s)		34.0			40.2			3.9			10.1	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.9%	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		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.90			0.98			0.99	
Flt Protected		0.97			0.99			0.99			0.96	
Satd. Flow (prot)		1729			1604			1742			1711	
Flt Permitted		0.73			0.96			0.83			0.69	
Satd. Flow (perm)		1307			1547			1455			1229	
Volume (vph)	35	20	5	40	35	245	5	20	5	425	50	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	22	6	44	39	272	6	22	6	472	56	44
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	67	0	0	355	0	0	34	0	0	572	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		19.8			19.8			6.5			37.5	
Effective Green, g (s)		20.8			20.8			7.5			38.5	
Actuated g/C Ratio		0.31			0.31			0.11			0.57	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		404			478			162			896	
v/s Ratio Prot											c0.26	
v/s Ratio Perm		0.05			c0.23			0.02			c0.11	
v/c Ratio		0.17			0.74			0.21			0.64	
Uniform Delay, d1		16.9			20.9			27.2			9.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			6.2			0.6			1.5	
Delay (s)		17.1			27.0			27.9			11.2	
Level of Service		B			C			C			B	
Approach Delay (s)		17.1			27.0			27.9			11.2	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.0%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.95			1.00	0.85		1.00	0.85		0.98	
Flt Protected		0.99			1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1764			1859	1583		1812	1583		1811	
Flt Permitted		0.93			0.98	1.00		0.66	1.00		0.89	
Satd. Flow (perm)		1654			1829	1583		1238	1583		1631	
Volume (vph)	40	180	120	10	245	60	205	160	20	45	185	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	200	133	11	272	67	228	178	22	50	206	44
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	12	0	0	0
Lane Group Flow (vph)	0	377	0	0	283	21	0	406	10	0	300	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		17.3			17.3	17.3		26.8	26.8		26.8	
Effective Green, g (s)		18.3			18.3	18.3		27.8	27.8		27.8	
Actuated g/C Ratio		0.31			0.31	0.31		0.47	0.47		0.47	
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)		514			568	492		584	747		770	
v/s Ratio Prot												
v/s Ratio Perm		c0.23			0.15	0.01		c0.33	0.01		0.18	
v/c Ratio		0.73			0.50	0.04		0.70	0.01		0.39	
Uniform Delay, d1		18.1			16.6	14.2		12.2	8.3		10.1	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		5.4			0.7	0.0		3.6	0.0		0.3	
Delay (s)		23.5			17.2	14.2		15.8	8.3		10.4	
Level of Service		C			B	B		B	A		B	
Approach Delay (s)		23.5			16.7			15.4			10.4	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.48	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	862	1863	1801	1583
Volume (vph)	230	15	15	405	315	630
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	256	17	17	450	350	700
RTOR Reduction (vph)	0	12	0	0	0	0
Lane Group Flow (vph)	256	5	17	450	350	700
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	37.8	37.8	66.0	66.0	66.0	66.0
Effective Green, g (s)	38.8	38.8	67.0	67.0	67.0	67.0
Actuated g/C Ratio	0.32	0.32	0.56	0.56	0.56	0.56
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)	553	512	481	1040	1006	884
v/s Ratio Prot	c0.15	0.00		0.24	0.19	
v/s Ratio Perm			0.02			c0.44
v/c Ratio	0.46	0.01	0.04	0.43	0.35	0.79
Uniform Delay, d1	32.3	27.6	11.9	15.4	14.5	21.0
Progression Factor	0.72	0.77	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.0	0.1	1.3	0.2	4.9
Delay (s)	26.0	21.2	12.1	16.7	14.7	25.9
Level of Service	C	C	B	B	B	C
Approach Delay (s)	25.7			16.6	22.2	
Approach LOS	C			B	C	

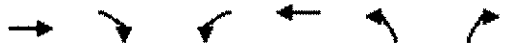
Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		1.00			0.92			0.99		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1948			1829			1971		1711	1761	
Flt Permitted		0.72			0.97			0.99		0.53	1.00	
Satd. Flow (perm)		1434			1787			1953		956	1761	
Volume (vph)	30	45	0	10	55	85	10	215	10	95	145	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	50	0	11	61	94	11	239	11	106	161	28
RTOR Reduction (vph)	0	0	0	0	75	0	0	2	0	0	5	0
Lane Group Flow (vph)	0	83	0	0	91	0	0	259	0	106	184	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.6			7.6			28.7		39.4	39.4	
Effective Green, g (s)		8.6			8.6			29.7		40.4	40.4	
Actuated g/C Ratio		0.14			0.14			0.50		0.67	0.67	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		206			257			968		729	1188	
v/s Ratio Prot										0.02	c0.10	
v/s Ratio Perm		c0.06			0.05			c0.13		0.08		
v/c Ratio		0.40			0.36			0.27		0.15	0.15	
Uniform Delay, d1		23.3			23.2			8.8		3.9	3.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.3			0.8			0.1		0.1	0.1	
Delay (s)		24.6			24.0			8.9		4.0	3.6	
Level of Service		C			C			A		A	A	
Approach Delay (s)		24.6			24.0			8.9			3.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	60	95	550	95	225	210
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	106	611	106	250	233
RTOR Reduction (vph)	0	58	0	0	0	45
Lane Group Flow (vph)	67	48	611	106	250	188
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	8.0	52.2	46.6	59.6	44.2	95.8
Effective Green, g (s)	9.0	54.2	47.6	60.6	45.2	96.8
Actuated g/C Ratio	0.08	0.45	0.40	0.51	0.38	0.81
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	140	715	702	941	667	1277
v/s Ratio Prot	c0.04	0.03	c0.35	0.06	c0.14	0.12
v/s Ratio Perm		0.01				
v/c Ratio	0.48	0.07	0.87	0.11	0.37	0.15
Uniform Delay, d1	53.2	18.6	33.4	15.6	27.1	2.5
Progression Factor	1.00	1.00	0.34	0.20	1.00	4.45
Incremental Delay, d2	2.6	0.0	7.4	0.0	1.5	0.1
Delay (s)	55.8	18.6	18.8	3.1	28.6	11.4
Level of Service	E	B	B	A	C	B
Approach Delay (s)	33.0			16.5	20.3	
Approach LOS	C			B	C	

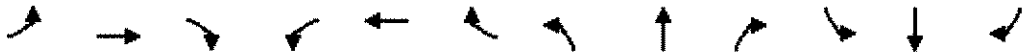
Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.98		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1648			1786		1770	1825		1770	1856	
Flt Permitted		0.94			0.88		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1570			1591		1770	1825		1770	1856	
Volume (vph)	5	0	20	30	40	15	80	415	65	10	620	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	22	33	44	17	89	461	72	11	689	17
RTOR Reduction (vph)	0	20	0	0	6	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	8	0	0	88	0	89	530	0	11	705	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		10.7			10.7		10.4	84.9		3.2	77.7	
Effective Green, g (s)		11.7			11.7		11.4	85.9		4.2	78.7	
Actuated g/C Ratio		0.10			0.10		0.10	0.72		0.04	0.66	
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)		153			155		168	1306		62	1217	
v/s Ratio Prot							c0.05	0.29		0.01	c0.38	
v/s Ratio Perm		0.01			c0.06							
v/c Ratio		0.05			0.57		0.53	0.41		0.18	0.58	
Uniform Delay, d1		49.1			51.7		51.7	6.8		56.2	11.5	
Progression Factor		1.00			1.06		0.97	1.24		1.27	0.10	
Incremental Delay, d2		0.1			4.7		2.7	0.9		0.9	1.3	
Delay (s)		49.3			59.2		53.1	9.3		72.5	2.4	
Level of Service		D			E		D	A		E	A	
Approach Delay (s)		49.3			59.2			15.6			3.5	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780			1808		1770	1860		1770	1846	
Flt Permitted		0.75			0.89		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1350			1614		1770	1860		1770	1846	
Volume (vph)	45	65	30	15	65	15	65	500	5	5	625	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	72	33	17	72	17	72	556	6	6	694	44
RTOR Reduction (vph)	0	8	0	0	6	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	147	0	0	100	0	72	562	0	6	737	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		13.8			13.8		7.8	83.4		1.6	77.2	
Effective Green, g (s)		14.8			14.8		8.8	84.4		2.6	78.2	
Actuated g/C Ratio		0.12			0.12		0.07	0.70		0.02	0.65	
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)		167			199		130	1308		38	1203	
v/s Ratio Prot							c0.04	0.30		0.00	c0.40	
v/s Ratio Perm		c0.11			0.06							
v/c Ratio		0.88			0.50		0.55	0.43		0.16	0.61	
Uniform Delay, d1		51.7			49.2		53.7	7.6		57.6	12.1	
Progression Factor		1.00			1.00		0.91	1.17		1.19	0.18	
Incremental Delay, d2		37.8			2.0		4.5	0.9		1.6	2.0	
Delay (s)		89.5			51.1		53.3	9.8		70.2	4.2	
Level of Service		F			D		D	A		E	A	
Approach Delay (s)		89.5			51.1			14.7			4.7	
Approach LOS		F			D			B			A	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



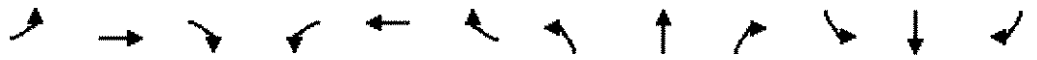
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1827	1583		1766		1770	1843		1770	1846	
Flt Permitted		0.87	1.00		0.39		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1624	1583		721		1770	1843		1770	1846	
Volume (vph)	50	80	105	40	5	5	135	515	40	5	625	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	89	117	44	6	6	150	572	44	6	694	44
RTOR Reduction (vph)	0	0	92	0	4	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	145	25	0	52	0	150	615	0	6	736	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		11.8	11.8		11.8		14.5	85.4		1.6	72.5	
Effective Green, g (s)		12.8	12.8		12.8		15.5	86.4		2.6	73.5	
Actuated g/C Ratio		0.11	0.11		0.11		0.13	0.72		0.02	0.61	
Clearance Time (s)		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	
Lane Grp Cap (vph)		173	169		77		229	1327		38	1131	
v/s Ratio Prot							c0.08	0.33		0.00	c0.40	
v/s Ratio Perm		c0.09	0.02		0.07							
v/c Ratio		0.84	0.15		0.68		0.66	0.46		0.16	0.65	
Uniform Delay, d1		52.6	48.6		51.6		49.7	7.1		57.6	15.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.35	0.31	
Incremental Delay, d2		28.3	0.4		22.0		6.6	1.2		1.6	2.3	
Delay (s)		80.8	49.1		73.6		56.3	8.2		79.3	7.0	
Level of Service		F	D		E		E	A		E	A	
Approach Delay (s)		66.6			73.6			17.6			7.6	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	100	100	35	100	25	30	350	55	20	290	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	111	111	39	111	28	33	389	61	22	322	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	233	178	483	350
Volume Left (vph)	11	39	33	22
Volume Right (vph)	111	28	61	6
Hadj (s)	-0.24	-0.02	-0.03	0.04
Departure Headway (s)	6.8	7.2	6.1	6.4
Degree Utilization, x	0.44	0.35	0.82	0.63
Capacity (veh/h)	475	442	563	521
Control Delay (s)	15.0	14.1	31.0	19.6
Approach Delay (s)	15.0	14.1	31.0	19.6
Approach LOS	B	B	D	C

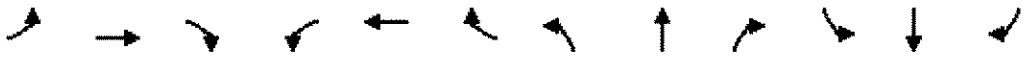
Intersection Summary			
Delay	22.4		
HCM Level of Service	C		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	55	400	80	100	10	140	420	55	10	410	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	61	444	89	111	11	156	467	61	11	456	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	511	211	683	472
Volume Left (vph)	6	89	156	11
Volume Right (vph)	444	11	61	6
Hadj (s)	-0.49	0.09	0.03	0.03
Departure Headway (s)	8.0	9.7	8.5	8.5
Degree Utilization, x	1.13	0.57	1.61	1.11
Capacity (veh/h)	456	363	429	437
Control Delay (s)	110.4	24.5	305.9	106.5
Approach Delay (s)	110.4	24.5	305.9	106.5
Approach LOS	F	C	F	F

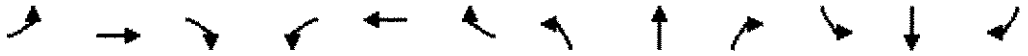
Intersection Summary			
Delay	170.9		
HCM Level of Service	F		
Intersection Capacity Utilization	107.1%	ICU Level of Service	G
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	110	0	10	15	90	5	55	10	100	20	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	122	0	11	17	100	6	61	11	111	22	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	128	78	156
Volume Left (vph)	22	11	6	111
Volume Right (vph)	0	100	11	22
Hadj (s)	0.06	-0.42	-0.04	0.09
Departure Headway (s)	4.7	4.2	4.7	4.7
Degree Utilization, x	0.19	0.15	0.10	0.20
Capacity (veh/h)	719	790	712	713
Control Delay (s)	8.8	8.0	8.2	8.9
Approach Delay (s)	8.8	8.0	8.2	8.9
Approach LOS	A	A	A	A

Intersection Summary				
Delay			8.5	
HCM Level of Service			A	
Intersection Capacity Utilization		32.2%	ICU Level of Service	A
Analysis Period (min)			15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	15	45	5	40	20	675	25	20	915	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	17	50	6	44	22	750	28	22	1017	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1919	1886	1019	1892	1875	764	1022			778		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1919	1886	1019	1892	1875	764	1022			778		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	92	94	0	92	89	97			97		
cM capacity (veh/h)	41	66	288	45	67	404	679			839		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	100	800	1044
Volume Left	6	50	22	22
Volume Right	17	44	28	6
cSH	100	77	679	839
Volume to Capacity	0.28	1.31	0.03	0.03
Queue Length 95th (ft)	26	194	3	2
Control Delay (s)	54.5	300.8	0.9	0.8
Lane LOS	F	F	A	A
Approach Delay (s)	54.5	300.8	0.9	0.8
Approach LOS	F	F		

Intersection Summary			
Average Delay	16.8		
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	55	75	630	30	55	890
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	83	700	33	61	989
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	1828	717			733	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1969	668			688	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	79			92	
cM capacity (veh/h)	54	391			774	

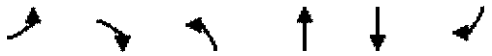
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	144	733	1050
Volume Left	61	0	61
Volume Right	83	33	0
cSH	108	1700	774
Volume to Capacity	1.34	0.43	0.08
Queue Length 95th (ft)	250	0	6
Control Delay (s)	276.8	0.0	2.4
Lane LOS	F		A
Approach Delay (s)	276.8	0.0	2.4
Approach LOS	F		

Intersection Summary			
Average Delay	22.0		
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	25	65	375	25	35	275
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	72	417	28	39	306
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.91					
vC, conflicting volume	814	431			444	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	795	431			444	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	88			97	
cM capacity (veh/h)	313	625			1116	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	100	444	344
Volume Left	28	0	39
Volume Right	72	28	0
cSH	489	1700	1116
Volume to Capacity	0.20	0.26	0.03
Queue Length 95th (ft)	19	0	3
Control Delay (s)	14.2	0.0	1.3
Lane LOS	B		A
Approach Delay (s)	14.2	0.0	1.3
Approach LOS	B		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	60	10	50	340	270	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	11	56	378	300	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	808	319	339			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	799	286	306			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	98	95			
cM capacity (veh/h)	322	718	1195			

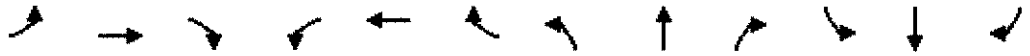
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	433	339
Volume Left	67	56	0
Volume Right	11	0	39
cSH	350	1195	1700
Volume to Capacity	0.22	0.05	0.20
Queue Length 95th (ft)	21	4	0
Control Delay (s)	18.2	1.5	0.0
Lane LOS	C	A	
Approach Delay (s)	18.2	1.5	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1837		1770	1786			1936			1728	
Flt Permitted	0.27	1.00		0.45	1.00			0.96			0.88	
Satd. Flow (perm)	490	1837		836	1786			1858			1530	
Volume (vph)	35	290	30	45	440	25	25	215	45	60	140	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	322	33	50	489	28	28	239	50	67	156	61
RTOR Reduction (vph)	0	5	0	0	3	0	0	6	0	0	8	0
Lane Group Flow (vph)	39	350	0	50	514	0	0	311	0	0	276	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	19.3	19.3		19.3	19.3			17.5			17.5	
Effective Green, g (s)	20.3	20.3		20.3	20.3			18.5			18.5	
Actuated g/C Ratio	0.39	0.39		0.39	0.39			0.36			0.36	
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)	193	723		329	703			666			549	
v/s Ratio Prot		0.19			c0.29							
v/s Ratio Perm	0.08			0.06				0.17			c0.18	
v/c Ratio	0.20	0.48		0.15	0.73			0.47			0.50	
Uniform Delay, d1	10.3	11.7		10.1	13.3			12.8			12.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.5		0.2	3.9			0.5			0.7	
Delay (s)	10.8	12.2		10.3	17.3			13.3			13.7	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		12.1			16.6			13.3			13.7	
Approach LOS		B			B			B			B	

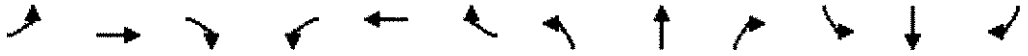
Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	51.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1868		1652	1759				
Flt Permitted	0.34	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	678	1739			1868		1652	1759				
Volume (vph)	15	315	0	0	450	65	100	190	35	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	350	0	0	500	72	111	211	39	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	7	0	0	0	0
Lane Group Flow (vph)	17	350	0	0	566	0	111	243	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	24.6	24.6			24.6		10.4	10.4				
Effective Green, g (s)	25.6	25.6			25.6		11.4	11.4				
Actuated g/C Ratio	0.54	0.54			0.54		0.24	0.24				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	366	939			1009		397	423				
v/s Ratio Prot		0.20			c0.30			c0.14				
v/s Ratio Perm	0.03						0.07					
v/c Ratio	0.05	0.37			0.56		0.28	0.57				
Uniform Delay, d1	5.1	6.3			7.2		14.7	15.9				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.3			0.7		0.4	1.9				
Delay (s)	5.2	6.5			7.9		15.0	17.8				
Level of Service	A	A			A		B	B				
Approach Delay (s)		6.5			7.9			16.9			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	47.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1670		1711	1801	1531		1632		1652	1739	1583
Flt Permitted	0.49	1.00		0.60	1.00	1.00		0.87		0.72	1.00	1.00
Satd. Flow (perm)	791	1670		1079	1801	1531		1442		1246	1739	1583
Volume (vph)	30	200	5	40	295	125	15	35	5	70	205	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	222	6	44	328	139	17	39	6	78	228	61
RTOR Reduction (vph)	0	1	0	0	0	80	0	4	0	0	0	41
Lane Group Flow (vph)	33	227	0	44	328	59	0	58	0	78	228	20
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	21.5	21.5		22.2	22.2	22.2		9.5		17.1	17.1	17.1
Effective Green, g (s)	22.5	22.5		23.2	23.2	23.2		10.5		18.1	18.1	18.1
Actuated g/C Ratio	0.41	0.41		0.43	0.43	0.43		0.19		0.33	0.33	0.33
Clearance Time (s)	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
Lane Grp Cap (vph)	327	689		459	767	652		278		441	578	526
v/s Ratio Prot		0.14			c0.18					0.01	c0.13	
v/s Ratio Perm	0.04			0.04		0.04		0.04		0.05		0.01
v/c Ratio	0.10	0.33		0.10	0.43	0.09		0.21		0.18	0.39	0.04
Uniform Delay, d1	9.8	10.9		9.4	11.0	9.3		18.5		13.0	14.0	12.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3		0.1	0.4	0.1		0.4		0.2	0.4	0.0
Delay (s)	9.9	11.2		9.5	11.4	9.4		18.9		13.2	14.4	12.3
Level of Service	A	B		A	B	A		B		B	B	B
Approach Delay (s)		11.0			10.7			18.9			13.8	
Approach LOS		B			B			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)	54.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1736	1478	1486	1512			1831	1794	1593	1817	
Flt Permitted		0.99	1.00	0.63	1.00			0.88	1.00	0.61	1.00	
Satd. Flow (perm)		1717	1478	978	1512			1631	1794	1025	1817	
Volume (vph)	5	185	45	20	245	70	70	135	30	20	50	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	206	50	22	272	78	78	150	33	22	56	11
RTOR Reduction (vph)	0	0	32	0	14	0	0	0	14	0	7	0
Lane Group Flow (vph)	0	212	18	22	336	0	0	228	19	22	60	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		14.3	14.3	14.3	14.3			12.3	12.3	12.3	12.3	
Effective Green, g (s)		15.3	15.3	15.3	15.3			13.3	13.3	13.3	13.3	
Actuated g/C Ratio		0.37	0.37	0.37	0.37			0.32	0.32	0.32	0.32	
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)		631	544	360	556			521	574	328	581	
v/s Ratio Prot					c0.22						0.03	
v/s Ratio Perm		0.12	0.01	0.02				c0.14	0.01	0.02		
v/c Ratio		0.34	0.03	0.06	0.60			0.44	0.03	0.07	0.10	
Uniform Delay, d1		9.5	8.4	8.5	10.7			11.2	9.7	9.8	10.0	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.0	0.1	1.9			0.6	0.0	0.1	0.1	
Delay (s)		9.8	8.4	8.6	12.6			11.8	9.8	9.9	10.0	
Level of Service		A	A	A	B			B	A	A	B	
Approach Delay (s)		9.5			12.3			11.5			10.0	
Approach LOS		A			B			B			B	

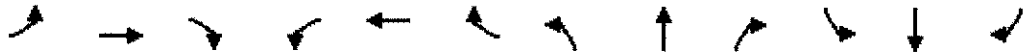
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.98			1.00			0.99	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1795			1923			1851			2093	
Flt Permitted		0.95			0.96			0.98			0.98	
Satd. Flow (perm)		1728			1865			1823			2061	
Volume (vph)	10	30	10	5	20	5	20	330	10	5	105	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	33	11	6	22	6	22	367	11	6	117	6
RTOR Reduction (vph)	0	9	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	46	0	0	34	0	0	399	0	0	127	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		346			373			706			799	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.22			0.06	
v/c Ratio		0.13			0.09			0.56			0.16	
Uniform Delay, d1		26.3			26.1			19.2			16.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.8			0.5			3.3			0.4	
Delay (s)		27.1			26.6			22.5			16.4	
Level of Service		C			C			C			B	
Approach Delay (s)		27.1			26.6			22.5			16.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

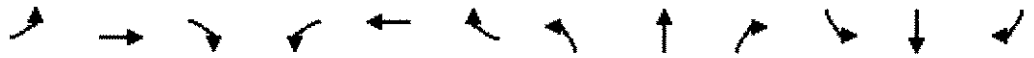
Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1877		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1877		
Volume (vph)	5	235	15	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	261	17	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	283	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	493		
v/s Ratio Prot	0.00	c0.15		
v/s Ratio Perm				
v/c Ratio	0.01	0.57		
Uniform Delay, d1	21.8	25.6		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	4.8		
Delay (s)	21.9	30.4		
Level of Service	C	C		
Approach Delay (s)		30.3		
Approach LOS		C		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1817	1583	1770	3536		1770	3503	
Flt Permitted		0.77	1.00		0.85	1.00	0.29	1.00		0.28	1.00	
Satd. Flow (perm)		1432	1583		1583	1583	543	3536		516	3503	
Volume (vph)	60	25	90	15	15	15	65	925	5	10	620	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	28	100	17	17	17	72	1028	6	11	689	50
RTOR Reduction (vph)	0	0	83	0	0	14	0	1	0	0	7	0
Lane Group Flow (vph)	0	95	17	0	34	3	72	1033	0	11	732	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		9.7	9.7		9.7	9.7	39.4	39.4		30.4	30.4	
Effective Green, g (s)		9.7	9.7		9.7	9.7	39.4	39.4		30.4	30.4	
Actuated g/C Ratio		0.17	0.17		0.17	0.17	0.69	0.69		0.53	0.53	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		243	269		269	269	482	2440		275	1865	
v/s Ratio Prot							0.01	c0.29			0.21	
v/s Ratio Perm		c0.07	0.01		0.02	0.00	0.09			0.02		
v/c Ratio		0.39	0.06		0.13	0.01	0.15	0.42		0.04	0.39	
Uniform Delay, d1		21.1	19.9		20.1	19.7	3.4	3.9		6.4	7.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.1		0.2	0.0	0.1	0.1		0.1	0.1	
Delay (s)		22.1	20.0		20.3	19.7	3.5	4.0		6.4	8.0	
Level of Service		C	B		C	B	A	A		A	A	
Approach Delay (s)		21.0			20.1			4.0			8.0	
Approach LOS		C			C			A			A	

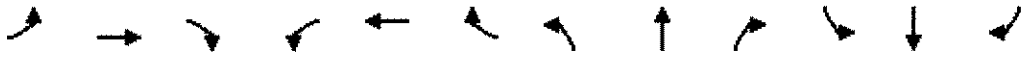
Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3299		1652	3267	
Flt Permitted		0.75	1.00	0.71	1.00		0.32	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		558	3299		1652	3267	
Volume (vph)	50	10	200	15	5	10	70	1060	10	10	645	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	222	17	6	11	78	1178	11	11	717	56
RTOR Reduction (vph)	0	0	197	0	10	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	67	25	17	7	0	78	1189	0	11	767	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		662	2207		21	1366	
v/s Ratio Prot					0.00		0.03	c0.36		0.01	c0.23	
v/s Ratio Perm		c0.05	0.02	0.01			0.05					
v/c Ratio		0.45	0.15	0.11	0.03		0.12	0.54		0.52	0.56	
Uniform Delay, d1		29.1	28.2	28.0	27.8		5.6	6.0		34.4	15.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		0.4	0.9		10.4	1.7	
Delay (s)		29.9	28.3	28.2	27.8		6.0	6.9		44.8	17.2	
Level of Service		C	C	C	C		A	A		D	B	
Approach Delay (s)		28.7			28.0			6.9			17.6	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM Average Control Delay	13.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	52.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1310	50	0	0	715	0	0	930	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1456	56	0	0	794	0	0	1033	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	736	776	0	0	794	0	0	1033	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.2	28.2			24.6			24.6	
Effective Green, g (s)				30.2	30.2			26.6			26.6	
Actuated g/C Ratio				0.47	0.47			0.41			0.41	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				783	788			1453			1453	
v/s Ratio Prot								0.22			c0.29	
v/s Ratio Perm				0.44	0.46							
v/c Ratio				0.94	0.98			0.55			0.71	
Uniform Delay, d1				16.4	17.1			14.5			15.9	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				18.8	28.1			0.4			1.7	
Delay (s)				35.3	45.1			14.9			17.6	
Level of Service				D	D			B			B	
Approach Delay (s)		0.0			40.3			14.9			17.6	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	27.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	64.8	Sum of lost time (s)	8.0
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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	80	35	30	150	10	50	310	50	10	410	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	89	39	33	167	11	56	344	56	11	456	6

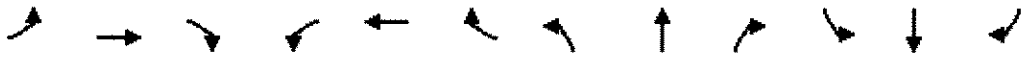
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	133	211	456	472
Volume Left (vph)	6	33	56	11
Volume Right (vph)	39	11	56	6
Hadj (s)	-0.13	0.03	-0.01	0.03
Departure Headway (s)	7.3	7.1	6.1	6.1
Degree Utilization, x	0.27	0.42	0.77	0.80
Capacity (veh/h)	422	451	567	565
Control Delay (s)	12.9	15.1	26.9	29.5
Approach Delay (s)	12.9	15.1	26.9	29.5
Approach LOS	B	C	D	D

Intersection Summary			
Delay	24.4		
HCM Level of Service	C		
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	75	5	415	235	5	400
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	6	461	261	6	444
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked						
vC, conflicting volume	1047	592			722	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1047	592			722	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	67	99			99	
cM capacity (veh/h)	251	506			880	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	89	722	450
Volume Left	83	0	6
Volume Right	6	261	0
cSH	259	1700	880
Volume to Capacity	0.34	0.42	0.01
Queue Length 95th (ft)	37	0	0
Control Delay (s)	26.0	0.0	0.2
Lane LOS	D		A
Approach Delay (s)	26.0	0.0	0.2
Approach LOS	D		

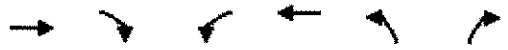
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	0	50	10	0	10	45	940	5	5	640	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	0	56	11	0	11	50	1044	6	6	711	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1381	1897	381	1569	1919	525	761			1050		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1381	1897	381	1569	1919	525	761			1050		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	100	91	83	100	98	94			99		
cM capacity (veh/h)	96	64	617	65	62	497	847			659		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	22	572	528	361	406
Volume Left	22	11	50	0	6	0
Volume Right	56	11	0	6	0	50
cSH	242	114	847	1700	659	1700
Volume to Capacity	0.32	0.19	0.06	0.31	0.01	0.24
Queue Length 95th (ft)	33	17	5	0	1	0
Control Delay (s)	26.8	44.0	1.6	0.0	0.3	0.0
Lane LOS	D	E	A		A	
Approach Delay (s)	26.8	44.0	0.8		0.1	
Approach LOS	D	E				

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	195	30	110	70	10	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	217	33	122	78	11	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			250		556	233
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		556	233
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		98	94
cM capacity (veh/h)			1316		447	806

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	250	200	56
Volume Left	0	122	11
Volume Right	33	0	44
cSH	1700	1316	694
Volume to Capacity	0.15	0.09	0.08
Queue Length 95th (ft)	0	8	7
Control Delay (s)	0.0	5.2	10.6
Lane LOS		A	B
Approach Delay (s)	0.0	5.2	10.6
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 RSG C1 & C2 Only*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*685*	*270*	*5*	*460*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*761*	*300*	*5*	*511*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*55*	*0*	*25*	*85*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*61*	*0*	*27*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*5*			*61*			*121*
C (m) (vph)		*652*			*493*			*274*
v/c		*0.01*			*0.12*			*0.44*
95% queue length		*0.02*			*0.42*			*2.13*
Control Delay		*10.6*			*13.3*			*28.1*
LOS		*B*			*B*			*D*
Approach Delay	--	--	*13.3*			*28.1*		
Approach LOS	--	--	*B*			*D*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 RSG C1 & C2 Only*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*75*	*610*	*0*	*0*	*480*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*83*	*677*	*0*	*0*	*533*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*150*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*166*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

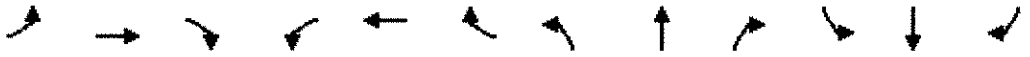
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*83*				*166*			
C (m) (vph)	*1035*				*126*			
v/c	*0.08*				*1.32*			
95% queue length	*0.26*				*10.78*			
Control Delay	*8.8*				*253.5*			
LOS	*A*				*F*			
Approach Delay	--	--	*253.5*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 2

AND

C-1 SECTION & C-2 SECTION ONLY

2008 PM PEAK HOUR

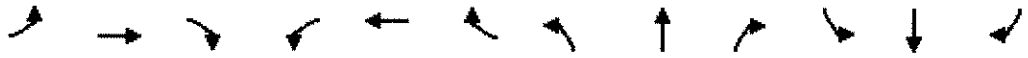


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1832	1583		1813	1583		3432		1770	1843	
Flt Permitted		0.87	1.00		0.79	1.00		0.83		0.95	1.00	
Satd. Flow (perm)		1628	1583		1477	1583		2850		1770	1843	
Volume (vph)	25	50	45	95	80	520	60	330	75	315	395	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	56	50	106	89	578	67	367	83	350	439	33
RTOR Reduction (vph)	0	0	36	0	0	254	0	0	0	0	0	0
Lane Group Flow (vph)	0	84	14	0	195	324	0	517	0	350	472	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		24.3	24.3		24.3	48.4		20.4		24.1	49.5	
Effective Green, g (s)		25.3	25.3		25.3	50.4		21.4		25.1	50.5	
Actuated g/C Ratio		0.28	0.28		0.28	0.56		0.24		0.28	0.56	
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)		458	445		415	886		678		494	1034	
v/s Ratio Prot			0.01			0.20				c0.20	0.26	
v/s Ratio Perm		0.05			c0.13			c0.18				
v/c Ratio		0.18	0.03		0.47	0.37		0.76		0.71	0.46	
Uniform Delay, d1		24.5	23.5		26.8	11.0		31.9		29.2	11.7	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.1		3.8	0.3		5.1		4.6	0.3	
Delay (s)		25.4	23.6		30.6	11.2		37.0		33.8	12.0	
Level of Service		C	C		C	B		D		C	B	
Approach Delay (s)		24.7			16.1			37.0			21.3	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.2
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.88			0.98			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.99	
Satd. Flow (prot)	1770	1840			1646			1816			1822	
Flt Permitted	0.34	1.00			0.99			0.91			0.85	
Satd. Flow (perm)	638	1840			1635			1667			1561	
Volume (vph)	50	60	5	10	35	260	25	155	30	140	360	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	67	6	11	39	289	28	172	33	156	400	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	56	73	0	0	339	0	0	233	0	0	595	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.5	21.5			21.5			50.0			50.0	
Effective Green, g (s)	22.5	22.5			22.5			51.0			51.0	
Actuated g/C Ratio	0.28	0.28			0.28			0.63			0.63	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	176	508			451			1043			977	
v/s Ratio Prot		0.04										
v/s Ratio Perm	0.09				c0.21			0.14			c0.38	
v/c Ratio	0.32	0.14			0.75			0.22			0.61	
Uniform Delay, d1	23.4	22.2			26.9			6.6			9.2	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.0	0.1			6.9			0.5			2.8	
Delay (s)	24.5	22.4			33.9			7.1			12.0	
Level of Service	C	C			C			A			B	
Approach Delay (s)		23.3			33.9			7.1			12.0	
Approach LOS		C			C			A			B	

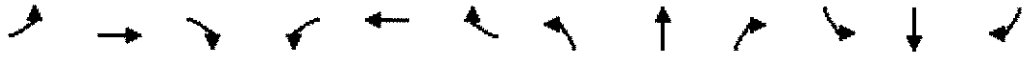
Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.89			0.95			0.98	
Flt Protected		0.98			1.00			1.00			0.96	
Satd. Flow (prot)		1749			1595			1706			1702	
Flt Permitted		0.77			0.99			1.00			0.54	
Satd. Flow (perm)		1381			1581			1706			959	
Volume (vph)	45	50	5	5	20	125	0	40	25	305	25	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	56	6	6	22	139	0	44	28	339	28	50
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	112	0	0	167	0	0	72	0	0	417	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.0			12.0			11.3			45.1	
Effective Green, g (s)		13.0			13.0			12.3			46.1	
Actuated g/C Ratio		0.19			0.19			0.18			0.69	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		268			306			313			989	
v/s Ratio Prot								0.04			c0.19	
v/s Ratio Perm		0.08			c0.11						c0.10	
v/c Ratio		0.42			0.55			0.23			0.42	
Uniform Delay, d1		23.7			24.4			23.4			4.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.1			2.0			0.4			0.3	
Delay (s)		24.8			26.4			23.7			4.9	
Level of Service		C			C			C			A	
Approach Delay (s)		24.8			26.4			23.7			4.9	
Approach LOS		C			C			C			A	

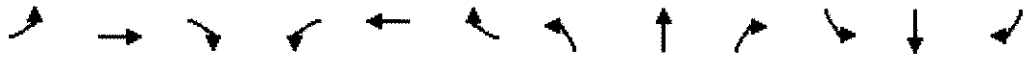
Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



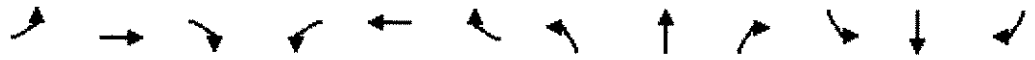
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.96			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1793			1845	1583		1799	1583		1823	
Flt Permitted		0.99			0.70	1.00		0.60	1.00		0.76	
Satd. Flow (perm)		1769			1310	1583		1117	1583		1411	
Volume (vph)	10	265	100	70	295	40	255	105	60	70	175	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	294	111	78	328	44	283	117	67	78	194	17
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	31	0	0	0
Lane Group Flow (vph)	0	416	0	0	406	15	0	400	36	0	289	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		37.5			37.5	37.5		60.3	60.3		60.3	
Effective Green, g (s)		41.5			41.5	41.5		64.3	64.3		64.3	
Actuated g/C Ratio		0.35			0.35	0.35		0.54	0.54		0.54	
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)		612			453	547		599	848		756	
v/s Ratio Prot												
v/s Ratio Perm		0.24			c0.31	0.01		c0.36	0.02		0.20	
v/c Ratio		0.68			0.90	0.03		0.67	0.04		0.38	
Uniform Delay, d1		33.6			37.2	25.9		20.1	13.2		16.3	
Progression Factor		1.00			1.00	1.00		0.60	0.42		1.00	
Incremental Delay, d2		3.0			19.8	0.0		3.5	0.1		0.3	
Delay (s)		36.6			57.1	25.9		15.7	5.6		16.6	
Level of Service		D			E	C		B	A		B	
Approach Delay (s)		36.6			54.0			14.2			16.6	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.99			1.00	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1713			1808			1825			1848	
Flt Permitted		0.99			0.61			0.75			0.92	
Satd. Flow (perm)		1704			1107			1397			1705	
Volume (vph)	5	130	195	50	160	35	170	380	25	30	305	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	144	217	56	178	39	189	422	28	33	339	11
RTOR Reduction (vph)	0	46	0	0	5	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	321	0	0	268	0	0	638	0	0	382	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.0			28.0			75.8			75.8	
Effective Green, g (s)		29.0			29.0			76.8			76.8	
Actuated g/C Ratio		0.24			0.24			0.64			0.64	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		412			268			894			1091	
v/s Ratio Prot												
v/s Ratio Perm		0.19			c0.24			c0.46			0.22	
v/c Ratio		0.78			1.00			0.71			0.35	
Uniform Delay, d1		42.5			45.5			14.3			10.0	
Progression Factor		1.00			1.00			0.36			0.93	
Incremental Delay, d2		9.0			54.2			0.4			0.7	
Delay (s)		51.5			99.7			5.5			10.0	
Level of Service		D			F			A			A	
Approach Delay (s)		51.5			99.7			5.5			10.0	
Approach LOS		D			F			A			A	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	12	11	12	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.91			0.95			0.99			1.00	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1645			1693			1763			1787	
Flt Permitted		0.99			0.53			0.76			0.88	
Satd. Flow (perm)		1630			910			1353			1576	
Volume (vph)	10	140	260	80	95	90	115	475	60	55	485	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	156	289	89	106	100	128	528	67	61	539	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	456	0	0	295	0	0	723	0	0	611	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		37.0			37.0			66.8			66.8	
Effective Green, g (s)		38.0			38.0			67.8			67.8	
Actuated g/C Ratio		0.32			0.32			0.56			0.56	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		516			288			764			890	
v/s Ratio Prot												
v/s Ratio Perm		0.28			c0.32			c0.53			0.39	
v/c Ratio		0.88			1.02			0.95			0.69	
Uniform Delay, d1		38.9			41.0			24.4			18.5	
Progression Factor		1.00			1.00			1.00			1.07	
Incremental Delay, d2		16.3			59.4			21.8			3.6	
Delay (s)		55.2			100.4			46.2			23.4	
Level of Service		E			F			D			C	
Approach Delay (s)		55.2			100.4			46.2			23.4	
Approach LOS		E			F			D			C	

Intersection Summary			
HCM Average Control Delay	49.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1832	1583		1813	1583		3451		1770	1843	
Flt Permitted		0.86	1.00		0.78	1.00		0.85		0.95	1.00	
Satd. Flow (perm)		1594	1583		1462	1583		2966		1770	1843	
Volume (vph)	25	50	45	95	80	420	60	430	75	315	395	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	56	50	106	89	467	67	478	83	350	439	33
RTOR Reduction (vph)	0	0	39	0	0	233	0	0	0	0	0	0
Lane Group Flow (vph)	0	84	11	0	195	234	0	628	0	350	472	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		11.8	11.8		11.8	23.1		17.6		11.3	33.9	
Effective Green, g (s)		12.8	12.8		12.8	25.1		18.6		12.3	34.9	
Actuated g/C Ratio		0.21	0.21		0.21	0.41		0.31		0.20	0.57	
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)		336	334		308	655		909		359	1060	
v/s Ratio Prot			0.01			0.15				c0.20	0.26	
v/s Ratio Perm		0.05			c0.13			c0.21				
v/c Ratio		0.25	0.03		0.63	0.36		0.69		0.97	0.45	
Uniform Delay, d1		20.0	19.0		21.8	12.3		18.5		24.0	7.4	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		4.2	0.3		2.3		40.5	0.3	
Delay (s)		20.3	19.1		26.0	12.6		20.8		64.5	7.7	
Level of Service		C	B		C	B		C		E	A	
Approach Delay (s)		19.9			16.5			20.8			31.9	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

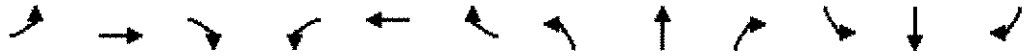
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.90			0.99			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1840			1671			1841			1822	
Flt Permitted	0.40	1.00			0.98			0.95			0.77	
Satd. Flow (perm)	750	1840			1649			1762			1416	
Volume (vph)	50	60	5	10	35	130	25	385	30	140	360	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	67	6	11	39	144	28	428	33	156	400	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	56	73	0	0	194	0	0	489	0	0	595	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.0	15.0			15.0			64.9			64.9	
Effective Green, g (s)	16.0	16.0			16.0			65.9			65.9	
Actuated g/C Ratio	0.18	0.18			0.18			0.73			0.73	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	133	327			293			1292			1038	
v/s Ratio Prot		0.04										
v/s Ratio Perm	0.07				c0.12			0.28			c0.42	
v/c Ratio	0.42	0.22			0.66			0.38			0.57	
Uniform Delay, d1	32.8	31.6			34.4			4.4			5.5	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	2.1	0.3			5.5			0.8			2.3	
Delay (s)	35.0	32.0			40.0			5.3			7.8	
Level of Service	C	C			D			A			A	
Approach Delay (s)		33.3			40.0			5.3			7.8	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.5%	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		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.87			0.95			0.98	
Flt Protected		0.98			1.00			1.00			0.96	
Satd. Flow (prot)		1749			1573			1706			1702	
Flt Permitted		0.73			1.00			1.00			0.56	
Satd. Flow (perm)		1305			1569			1706			1000	
Volume (vph)	45	50	5	5	20	355	0	40	25	305	25	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	56	6	6	22	394	0	44	28	339	28	50
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	112	0	0	422	0	0	72	0	0	417	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		20.1			20.1			13.8			31.7	
Effective Green, g (s)		21.1			21.1			14.8			32.7	
Actuated g/C Ratio		0.34			0.34			0.24			0.53	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		446			536			409			687	
v/s Ratio Prot								0.04			c0.14	
v/s Ratio Perm		0.09			c0.27						c0.18	
v/c Ratio		0.25			0.79			0.18			0.61	
Uniform Delay, d1		14.7			18.3			18.7			10.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			7.5			0.2			1.5	
Delay (s)		15.0			25.8			18.9			11.6	
Level of Service		B			C			B			B	
Approach Delay (s)		15.0			25.8			18.9			11.6	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



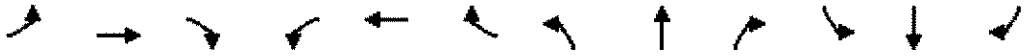
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.96			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1793			1845	1583		1809	1583		1823	
Flt Permitted		0.99			0.84	1.00		0.66	1.00		0.85	
Satd. Flow (perm)		1772			1572	1583		1233	1583		1563	
Volume (vph)	10	265	100	70	295	40	155	105	60	70	175	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	294	111	78	328	44	172	117	67	78	194	17
RTOR Reduction (vph)	0	0	0	0	0	28	0	0	40	0	0	0
Lane Group Flow (vph)	0	416	0	0	406	16	0	289	27	0	289	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		19.4			19.4	19.4		20.8	20.8		20.8	
Effective Green, g (s)		20.4			20.4	20.4		21.8	21.8		21.8	
Actuated g/C Ratio		0.37			0.37	0.37		0.40	0.40		0.40	
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)		657			583	587		489	627		620	
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.26	0.01		c0.23	0.02		0.18	
v/c Ratio		0.63			0.70	0.03		0.59	0.04		0.47	
Uniform Delay, d1		14.2			14.7	11.0		13.1	10.2		12.3	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		2.0			3.6	0.0		1.9	0.0		0.6	
Delay (s)		16.2			18.3	11.0		15.0	10.2		12.8	
Level of Service		B			B	B		B	B		B	
Approach Delay (s)		16.2			17.6			14.1			12.8	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.32	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	572	1863	1801	1583
Volume (vph)	355	45	15	325	490	620
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	394	50	17	361	544	689
RTOR Reduction (vph)	0	28	0	0	0	0
Lane Group Flow (vph)	394	22	17	361	544	689
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	52.8	52.8	81.0	81.0	81.0	81.0
Effective Green, g (s)	53.8	53.8	82.0	82.0	82.0	82.0
Actuated g/C Ratio	0.36	0.36	0.55	0.55	0.55	0.55
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)	614	568	313	1018	985	865
v/s Ratio Prot	c0.23	0.01		0.19	0.30	
v/s Ratio Perm			0.03			c0.44
v/c Ratio	0.64	0.04	0.05	0.35	0.55	0.80
Uniform Delay, d1	40.1	31.3	15.9	19.1	22.1	27.3
Progression Factor	0.79	0.92	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.1	0.3	1.0	0.7	5.1
Delay (s)	36.4	29.0	16.2	20.1	22.8	32.4
Level of Service	D	C	B	C	C	C
Approach Delay (s)	35.5			19.9	28.2	
Approach LOS	D			B	C	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.91			0.98		1.00	0.98	
Flt Protected		0.99			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		1919			1808			1932		1711	1760	
Flt Permitted		0.82			0.96			0.93		0.63	1.00	
Satd. Flow (perm)		1589			1744			1801		1129	1760	
Volume (vph)	40	75	20	25	75	175	15	70	15	160	225	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	83	22	28	83	194	17	78	17	178	250	44
RTOR Reduction (vph)	0	9	0	0	87	0	0	9	0	0	7	0
Lane Group Flow (vph)	0	140	0	0	218	0	0	103	0	178	287	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.2			11.2			12.3		23.7	23.7	
Effective Green, g (s)		12.2			12.2			13.3		24.7	24.7	
Actuated g/C Ratio		0.26			0.26			0.28		0.52	0.52	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		407			447			503		676	913	
v/s Ratio Prot										0.04	c0.16	
v/s Ratio Perm		0.09			c0.12			0.06		0.10		
v/c Ratio		0.34			0.49			0.21		0.26	0.31	
Uniform Delay, d1		14.4			15.0			13.1		6.4	6.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.5			0.8			0.2		0.2	0.2	
Delay (s)		14.9			15.9			13.3		6.6	6.8	
Level of Service		B			B			B		A	A	
Approach Delay (s)		14.9			15.9			13.3			6.7	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	110	310	575	60	135	290
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	344	639	67	150	322
RTOR Reduction (vph)	0	197	0	0	0	62
Lane Group Flow (vph)	122	147	639	67	150	260
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	13.5	62.1	66.7	85.2	48.6	120.3
Effective Green, g (s)	14.5	64.1	67.7	86.2	49.6	121.3
Actuated g/C Ratio	0.10	0.43	0.45	0.57	0.33	0.81
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	180	676	799	1071	585	1280
v/s Ratio Prot	c0.07	0.07	c0.36	0.04	c0.08	0.16
v/s Ratio Perm		0.02				
v/c Ratio	0.68	0.22	0.80	0.06	0.26	0.20
Uniform Delay, d1	65.5	27.1	35.3	14.1	36.7	3.3
Progression Factor	1.00	1.00	0.21	0.04	0.90	5.30
Incremental Delay, d2	9.7	0.2	3.5	0.0	1.0	0.1
Delay (s)	75.2	27.3	11.0	0.6	34.0	17.5
Level of Service	E	C	B	A	C	B
Approach Delay (s)	39.8			10.0	22.8	
Approach LOS	D			A	C	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	57.7%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.87			0.97		1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1623			1760		1770	1827		1770	1860	
Flt Permitted		0.98			0.50		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1602			899		1770	1827		1770	1860	
Volume (vph)	5	0	75	30	10	10	5	410	60	15	860	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	83	33	11	11	6	456	67	17	956	11
RTOR Reduction (vph)	0	76	0	0	6	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	13	0	0	49	0	6	521	0	17	967	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		10.9			10.9		1.6	113.1		4.8	116.3	
Effective Green, g (s)		11.9			11.9		2.6	114.1		5.8	117.3	
Actuated g/C Ratio		0.08			0.08		0.02	0.76		0.04	0.78	
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)		127			71		31	1390		68	1455	
v/s Ratio Prot							0.00	0.29		c0.01	c0.52	
v/s Ratio Perm		0.01			c0.05							
v/c Ratio		0.10			0.68		0.19	0.37		0.25	0.66	
Uniform Delay, d1		64.1			67.2		72.7	6.0		70.0	7.4	
Progression Factor		1.00			1.04		0.86	0.69		1.16	0.52	
Incremental Delay, d2		0.3			22.5		2.7	0.7		1.5	1.8	
Delay (s)		64.4			92.4		65.1	4.8		82.5	5.7	
Level of Service		E			F		E	A		F	A	
Approach Delay (s)		64.4			92.4			5.5			7.0	
Approach LOS		E			F			A			A	

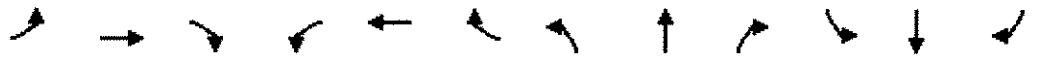
Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.99		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1762			1826		1770	1859		1770	1851	
Flt Permitted		0.77			0.76		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1373			1396		1770	1859		1770	1851	
Volume (vph)	65	120	85	25	95	10	60	400	5	10	915	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	133	94	28	106	11	67	444	6	11	1017	44
RTOR Reduction (vph)	0	11	0	0	2	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	288	0	0	143	0	67	450	0	11	1060	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		26.0			26.0		10.1	99.6		3.2	92.7	
Effective Green, g (s)		27.0			27.0		11.1	100.6		4.2	93.7	
Actuated g/C Ratio		0.18			0.18		0.07	0.67		0.03	0.62	
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)		247			251		131	1247		50	1156	
v/s Ratio Prot							c0.04	0.24		0.01	c0.57	
v/s Ratio Perm		c0.21			0.10							
v/c Ratio		1.17			0.57		0.51	0.36		0.22	0.92	
Uniform Delay, d1		61.5			56.2		66.8	10.7		71.3	24.7	
Progression Factor		1.00			1.00		1.00	1.13		1.21	0.41	
Incremental Delay, d2		110.1			3.1		3.1	0.8		1.7	10.5	
Delay (s)		171.6			59.3		69.8	12.9		88.0	20.8	
Level of Service		F			E		E	B		F	C	
Approach Delay (s)		171.6			59.3			20.2			21.5	
Approach LOS		F			E			C			C	

Intersection Summary			
HCM Average Control Delay	45.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	79.0%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.98		1.00	0.99	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1798		1770	1819		1770	1850	
Flt Permitted		0.70	1.00		0.62		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1295	1583		1141		1770	1819		1770	1850	
Volume (vph)	60	25	105	90	50	5	85	400	75	5	975	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	28	117	100	56	6	94	444	83	6	1083	50
RTOR Reduction (vph)	0	0	103	0	1	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	95	14	0	161	0	94	524	0	6	1132	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		17.0	17.0		17.0		12.1	110.2		1.6	99.7	
Effective Green, g (s)		18.0	18.0		18.0		13.1	111.2		2.6	100.7	
Actuated g/C Ratio		0.12	0.12		0.12		0.09	0.74		0.02	0.67	
Clearance Time (s)		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	
Lane Grp Cap (vph)		155	190		137		155	1348		31	1242	
v/s Ratio Prot							c0.05	0.29		0.00	c0.61	
v/s Ratio Perm		0.07	0.01		c0.14							
v/c Ratio		0.61	0.07		1.18		0.61	0.39		0.19	0.91	
Uniform Delay, d1		62.7	58.6		66.0		66.0	7.1		72.7	20.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.07	0.26	
Incremental Delay, d2		7.0	0.2		131.9		6.6	0.8		1.2	5.1	
Delay (s)		69.7	58.8		197.9		72.5	7.9		79.3	10.6	
Level of Service		E	E		F		E	A		E	B	
Approach Delay (s)		63.7			197.9			17.7			11.0	
Approach LOS		E			F			B			B	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	130	195	50	160	35	40	280	25	30	305	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	144	217	56	178	39	44	311	28	33	339	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	367	272	383	383
Volume Left (vph)	6	56	44	33
Volume Right (vph)	217	39	28	11
Hadj (s)	-0.32	-0.01	0.01	0.03
Departure Headway (s)	7.8	8.5	8.0	8.0
Degree Utilization, x	0.80	0.64	0.85	0.86
Capacity (veh/h)	431	373	433	429
Control Delay (s)	35.3	25.6	42.6	43.0
Approach Delay (s)	35.3	25.6	42.6	43.0
Approach LOS	E	D	E	E

Intersection Summary			
Delay	37.5		
HCM Level of Service	E		
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	140	290	80	95	90	345	245	60	55	485	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	156	322	89	106	100	383	272	67	61	539	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	489	294	722	611
Volume Left (vph)	11	89	383	61
Volume Right (vph)	322	100	67	11
Hadj (s)	-0.36	-0.11	0.08	0.04
Departure Headway (s)	8.6	9.5	9.1	9.0
Degree Utilization, x	1.17	0.77	1.82	1.53
Capacity (veh/h)	422	375	402	412
Control Delay (s)	127.9	38.2	399.7	275.1
Approach Delay (s)	127.9	38.2	399.7	275.1
Approach LOS	F	E	F	F

Intersection Summary			
Delay	250.6		
HCM Level of Service	F		
Intersection Capacity Utilization	118.8%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	65	5	10	100	80	5	20	15	110	50	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	72	6	11	111	89	6	22	17	122	56	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	83	211	44	189
Volume Left (vph)	6	11	6	122
Volume Right (vph)	6	89	17	11
Hadj (s)	0.01	-0.21	-0.17	0.13
Departure Headway (s)	4.7	4.4	4.7	4.8
Degree Utilization, x	0.11	0.26	0.06	0.25
Capacity (veh/h)	704	775	706	708
Control Delay (s)	8.3	8.9	8.0	9.4
Approach Delay (s)	8.3	8.9	8.0	9.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.9		
HCM Level of Service	A		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	20	25	5	30	15	700	45	45	1075	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	22	28	6	33	17	778	50	50	1194	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2172	2161	1200	2161	2142	803	1206			828		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2172	2161	1200	2161	2142	803	1206			828		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	57	87	90	0	87	91	97			94		
cM capacity (veh/h)	26	43	226	26	44	384	579			803		

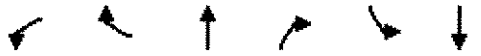
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	39	67	844	1256
Volume Left	11	28	17	50
Volume Right	22	33	50	11
cSH	59	52	579	803
Volume to Capacity	0.66	1.28	0.03	0.06
Queue Length 95th (ft)	69	150	2	5
Control Delay (s)	143.1	347.5	0.9	2.4
Lane LOS	F	F	A	A
Approach Delay (s)	143.1	347.5	0.9	2.4
Approach LOS	F	F		

Intersection Summary			
Average Delay	14.7		
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	30	55	670	10	55	1080
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	61	744	11	61	1200
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.89	0.89			0.89	
vC, conflicting volume	2072	750			756	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2204	719			725	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	17	84			92	
cM capacity (veh/h)	40	381			781	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	756	1261
Volume Left	33	0	61
Volume Right	61	11	0
cSH	95	1700	781
Volume to Capacity	0.99	0.44	0.08
Queue Length 95th (ft)	147	0	6
Control Delay (s)	170.4	0.0	3.0
Lane LOS	F		A
Approach Delay (s)	170.4	0.0	3.0
Approach LOS	F		

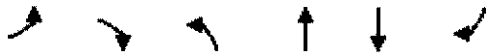
Intersection Summary			
Average Delay	9.4		
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	20	45	305	15	35	460
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	50	339	17	39	511
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.81					
vC, conflicting volume	936	347			356	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	921	347			356	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	93			97	
cM capacity (veh/h)	234	696			1203	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	72	356	550
Volume Left	22	0	39
Volume Right	50	17	0
cSH	433	1700	1203
Volume to Capacity	0.17	0.21	0.03
Queue Length 95th (ft)	15	0	3
Control Delay (s)	15.0	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	15.0	0.0	0.9
Approach LOS	B		

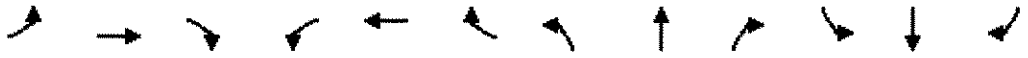
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	55	15	10	245	435	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	17	11	272	483	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.83	0.83	0.83			
vC, conflicting volume	800	506	528			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	758	402	429			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	97	99			
cM capacity (veh/h)	306	536	934			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	283	528
Volume Left	61	11	0
Volume Right	17	0	44
cSH	337	934	1700
Volume to Capacity	0.23	0.01	0.31
Queue Length 95th (ft)	22	1	0
Control Delay (s)	18.9	0.5	0.0
Lane LOS	C	A	
Approach Delay (s)	18.9	0.5	0.0
Approach LOS	C		

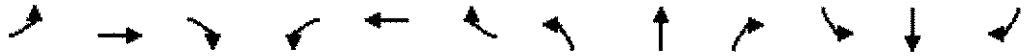
Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1840		1770	1784			1952			1760	
Flt Permitted	0.26	1.00		0.33	1.00			0.90			0.94	
Satd. Flow (perm)	476	1840		607	1784			1773			1666	
Volume (vph)	65	400	35	45	460	30	50	220	20	35	235	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	444	39	50	511	33	56	244	22	39	261	44
RTOR Reduction (vph)	0	4	0	0	3	0	0	3	0	0	5	0
Lane Group Flow (vph)	72	479	0	50	541	0	0	319	0	0	339	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	20.2	20.2		20.2	20.2			16.5			16.5	
Effective Green, g (s)	21.2	21.2		21.2	21.2			17.5			17.5	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.34			0.34	
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)	197	760		251	737			605			568	
v/s Ratio Prot		0.26			c0.30							
v/s Ratio Perm	0.15			0.08				0.18			c0.20	
v/c Ratio	0.37	0.63		0.20	0.73			0.53			0.60	
Uniform Delay, d1	10.4	11.9		9.6	12.7			13.6			14.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	1.7		0.4	3.8			0.8			1.7	
Delay (s)	11.6	13.6		10.0	16.5			14.4			15.7	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		13.4			15.9			14.4			15.7	
Approach LOS		B			B			B			B	

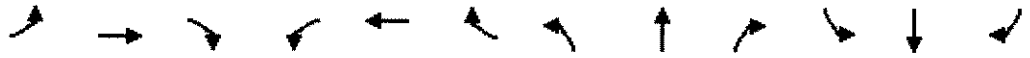
Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	51.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



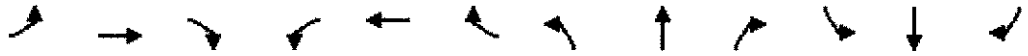
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1881		1652	1776				
Flt Permitted	0.25	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	505	1739			1881		1652	1776				
Volume (vph)	40	475	0	0	500	40	65	300	30	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	528	0	0	556	44	72	333	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	3	0	0	0	0
Lane Group Flow (vph)	44	528	0	0	596	0	72	363	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	21.3	21.3			21.3		15.3	15.3				
Effective Green, g (s)	22.3	22.3			22.3		16.3	16.3				
Actuated g/C Ratio	0.46	0.46			0.46		0.33	0.33				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	230	791			856		550	591				
v/s Ratio Prot		0.30			c0.32			c0.20				
v/s Ratio Perm	0.09						0.04					
v/c Ratio	0.19	0.67			0.70		0.13	0.61				
Uniform Delay, d1	8.0	10.4			10.7		11.4	13.7				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.4	2.1			2.5		0.1	1.9				
Delay (s)	8.4	12.6			13.1		11.5	15.6				
Level of Service	A	B			B		B	B				
Approach Delay (s)		12.3			13.1			14.9			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.5%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1648		1711	1801	1531		1626		1652	1739	1583
Flt Permitted	0.41	1.00		0.45	1.00	1.00		0.79		0.66	1.00	1.00
Satd. Flow (perm)	659	1648		810	1801	1531		1292		1145	1739	1583
Volume (vph)	110	280	35	70	350	155	5	90	25	220	305	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	311	39	78	389	172	6	100	28	244	339	100
RTOR Reduction (vph)	0	5	0	0	0	103	0	9	0	0	0	63
Lane Group Flow (vph)	122	345	0	78	389	69	0	125	0	244	339	37
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	21.9	21.9		21.7	21.7	21.7		8.1		19.8	19.8	19.8
Effective Green, g (s)	22.9	22.9		22.7	22.7	22.7		9.1		20.8	20.8	20.8
Actuated g/C Ratio	0.40	0.40		0.40	0.40	0.40		0.16		0.37	0.37	0.37
Clearance Time (s)	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
Lane Grp Cap (vph)	266	664		324	720	612		207		488	637	580
v/s Ratio Prot		0.21			c0.22					0.07	c0.19	
v/s Ratio Perm	0.19			0.10		0.04		0.10		0.12		0.02
v/c Ratio	0.46	0.52		0.24	0.54	0.11		0.60		0.50	0.53	0.06
Uniform Delay, d1	12.4	12.8		11.3	13.1	10.7		22.2		16.2	14.2	11.7
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.7		0.4	0.8	0.1		4.9		0.8	0.9	0.0
Delay (s)	13.7	13.5		11.7	13.9	10.8		27.0		17.0	15.0	11.7
Level of Service	B	B		B	B	B		C		B	B	B
Approach Delay (s)		13.5			12.8			27.0			15.2	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1734	1478	1486	1525			1821	1794	1593	1829	
Flt Permitted		0.97	1.00	0.50	1.00			0.81	1.00	0.64	1.00	
Satd. Flow (perm)		1688	1478	778	1525			1502	1794	1076	1829	
Volume (vph)	15	285	85	55	320	65	75	90	60	100	110	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	317	94	61	356	72	83	100	67	111	122	17
RTOR Reduction (vph)	0	0	37	0	9	0	0	0	37	0	5	0
Lane Group Flow (vph)	0	334	57	61	419	0	0	183	30	111	134	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		17.4	17.4	17.4	17.4			12.5	12.5	12.5	12.5	
Effective Green, g (s)		18.4	18.4	18.4	18.4			13.5	13.5	13.5	13.5	
Actuated g/C Ratio		0.41	0.41	0.41	0.41			0.30	0.30	0.30	0.30	
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)		692	606	319	625			452	539	324	550	
v/s Ratio Prot					c0.27						0.07	
v/s Ratio Perm		0.20	0.04	0.08				c0.12	0.02	0.10		
v/c Ratio		0.48	0.09	0.19	0.67			0.40	0.06	0.34	0.24	
Uniform Delay, d1		9.7	8.1	8.5	10.8			12.5	11.2	12.2	11.8	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.1	0.3	2.8			0.6	0.0	0.6	0.2	
Delay (s)		10.3	8.2	8.8	13.6			13.1	11.2	12.9	12.1	
Level of Service		B	A	A	B			B	B	B	B	
Approach Delay (s)		9.8			13.0			12.6			12.4	
Approach LOS		A			B			B			B	

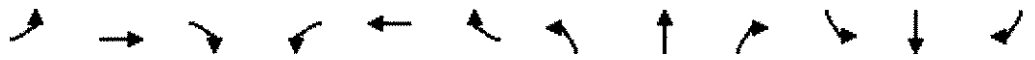
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			1.00			0.99	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1821			1926			1854			2094	
Flt Permitted		0.93			0.89			0.98			0.99	
Satd. Flow (perm)		1722			1753			1820			2081	
Volume (vph)	15	45	5	20	30	5	15	315	5	5	265	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	6	22	33	6	17	350	6	6	294	17
RTOR Reduction (vph)	0	4	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	69	0	0	61	0	0	372	0	0	315	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		344			351			705			806	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			c0.20			0.15	
v/c Ratio		0.20			0.17			0.53			0.39	
Uniform Delay, d1		26.7			26.5			18.9			17.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			1.1			2.8			1.4	
Delay (s)		28.0			27.6			21.7			19.1	
Level of Service		C			C			C			B	
Approach Delay (s)		28.0			27.6			21.7			19.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	1.00		
Flt Protected	0.95	0.95		
Satd. Flow (prot)	1888	1887		
Flt Permitted	0.95	0.95		
Satd. Flow (perm)	1888	1887		
Volume (vph)	51	375	5	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	417	6	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	57	428	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	495		
v/s Ratio Prot	0.03	c0.23		
v/s Ratio Perm				
v/c Ratio	0.11	0.87		
Uniform Delay, d1	22.4	28.1		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.5	18.0		
Delay (s)	22.9	46.1		
Level of Service	C	D		
Approach Delay (s)		43.4		
Approach LOS		D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583		1808	1583	1770	3534		1770	3500	
Flt Permitted		0.74	1.00		0.79	1.00	0.18	1.00		0.23	1.00	
Satd. Flow (perm)		1371	1583		1465	1583	337	3534		428	3500	
Volume (vph)	55	15	130	30	20	35	125	1090	10	30	875	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	17	144	33	22	39	139	1211	11	33	972	78
RTOR Reduction (vph)	0	0	124	0	0	34	0	1	0	0	7	0
Lane Group Flow (vph)	0	78	20	0	55	5	139	1221	0	33	1043	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		8.1	8.1		8.1	8.1	42.0	42.0		31.3	31.3	
Effective Green, g (s)		8.1	8.1		8.1	8.1	42.0	42.0		31.3	31.3	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.72	0.72		0.54	0.54	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		191	221		204	221	409	2555		231	1886	
v/s Ratio Prot							0.04	c0.35			c0.30	
v/s Ratio Perm		c0.06	0.01		0.04	0.00	0.21			0.08		
v/c Ratio		0.41	0.09		0.27	0.02	0.34	0.48		0.14	0.55	
Uniform Delay, d1		22.8	21.8		22.4	21.6	4.1	3.4		6.7	8.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4	0.2		0.7	0.0	0.5	0.1		0.3	0.4	
Delay (s)		24.2	22.0		23.1	21.6	4.6	3.6		7.0	9.2	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		22.8			22.5			3.7			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1478	1770	1909		1652	3297		1652	3295	
Flt Permitted		0.79	1.00	0.71	1.00		0.23	1.00		0.95	1.00	
Satd. Flow (perm)		1415	1478	1329	1909		393	3297		1652	3295	
Volume (vph)	35	25	140	30	20	35	160	1285	15	40	910	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	28	156	33	22	39	178	1428	17	44	1011	17
RTOR Reduction (vph)	0	0	141	0	35	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	67	15	33	26	0	178	1444	0	44	1027	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		6.7	6.7	6.7	6.7		42.0	42.0		3.5	28.5	
Effective Green, g (s)		6.7	6.7	6.7	6.7		43.0	43.0		3.5	29.5	
Actuated g/C Ratio		0.10	0.10	0.10	0.10		0.64	0.64		0.05	0.44	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		140	146	132	189		566	2094		85	1436	
v/s Ratio Prot					0.01		0.08	c0.44		0.03	c0.31	
v/s Ratio Perm		c0.05	0.01	0.02			0.12					
v/c Ratio		0.48	0.11	0.25	0.14		0.31	0.69		0.52	0.72	
Uniform Delay, d1		28.8	27.8	28.2	27.9		10.2	8.0		31.3	15.7	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.1	0.4	0.1		1.5	1.9		2.2	3.1	
Delay (s)		29.8	27.9	28.5	28.0		11.7	9.9		33.5	18.7	
Level of Service		C	C	C	C		B	A		C	B	
Approach Delay (s)		28.5			28.2			10.1			19.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1700			3539			3537	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1700			3539			3537	
Volume (vph)	0	0	0	1320	135	0	0	810	0	0	1380	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1467	150	0	0	900	0	0	1533	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	787	830	0	0	900	0	0	1538	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			30.0			30.0	
Effective Green, g (s)				30.0	30.0			32.0			32.0	
Actuated g/C Ratio				0.43	0.43			0.46			0.46	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				720	729			1618			1617	
v/s Ratio Prot								0.25			c0.43	
v/s Ratio Perm				0.47	0.49							
v/c Ratio				1.09	1.14			0.56			0.95	
Uniform Delay, d1				20.0	20.0			13.8			18.3	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				61.8	78.5			0.4			12.7	
Delay (s)				81.8	98.5			14.2			30.9	
Level of Service				F	F			B			C	
Approach Delay (s)		0.0			90.3			14.2			30.9	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	50.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	145	70	50	100	20	125	215	50	55	285	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	161	78	56	111	22	139	239	56	61	317	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	261	189	433	406
Volume Left (vph)	22	56	139	61
Volume Right (vph)	78	22	56	28
Hadj (s)	-0.13	0.02	0.02	0.02
Departure Headway (s)	7.2	7.6	6.6	6.7
Degree Utilization, x	0.52	0.40	0.80	0.75
Capacity (veh/h)	440	410	515	512
Control Delay (s)	17.8	15.6	30.9	27.4
Approach Delay (s)	17.8	15.6	30.9	27.4
Approach LOS	C	C	D	D

Intersection Summary			
Delay	24.9		
HCM Level of Service	C		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	145	5	420	265	5	660
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	161	6	467	294	6	733
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.92					
vC, conflicting volume	1358	614			761	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1390	614			761	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	99			99	
cM capacity (veh/h)	143	492			851	

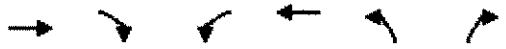
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	167	761	739
Volume Left	161	0	6
Volume Right	6	294	0
cSH	147	1700	851
Volume to Capacity	1.14	0.45	0.01
Queue Length 95th (ft)	231	0	0
Control Delay (s)	176.5	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	176.5	0.0	0.2
Approach LOS	F		

Intersection Summary			
Average Delay	17.7		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	0	45	10	0	10	35	1095	5	5	940	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	0	50	11	0	11	39	1217	6	6	1044	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1767	2369	536	1881	2381	611	1072			1222		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1767	2369	536	1881	2381	611	1072			1222		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	32	100	90	70	100	97	94			99		
cM capacity (veh/h)	49	32	489	37	32	437	646			566		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	22	647	614	528	550
Volume Left	33	11	39	0	6	0
Volume Right	50	11	0	6	0	28
cSH	107	68	646	1700	566	1700
Volume to Capacity	0.78	0.33	0.06	0.36	0.01	0.32
Queue Length 95th (ft)	108	30	5	0	1	0
Control Delay (s)	109.4	81.4	1.6	0.0	0.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	109.4	81.4	0.8		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	125	20	35	145	35	65
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	22	39	161	39	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			161		389	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			161		389	150
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	92
cM capacity (veh/h)			1418		598	896

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	161	200	111
Volume Left	0	39	39
Volume Right	22	0	72
cSH	1700	1418	763
Volume to Capacity	0.09	0.03	0.15
Queue Length 95th (ft)	0	2	13
Control Delay (s)	0.0	1.7	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	10.5
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 RSG C1 & C2 Only*
Analysis Time Period	*PM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *LOCUST/LEDGE*	North/South Street: *ROUTE 7*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*715*	*280*	*30*	*760*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*794*	*311*	*33*	*844*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*60*	*0*	*30*	*75*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*66*	*0*	*33*	*83*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*33*			*66*			*116*
C (m) (vph)		*628*			*477*			*126*
v/c		*0.05*			*0.14*			*0.92*
95% queue length		*0.17*			*0.48*			*6.00*
Control Delay		*11.1*			*13.8*			*126.0*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*13.8*			*126.0*		
Approach LOS	--	--	*B*			*F*		

Version 4.1d

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 RSG C1 & C2 Only*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*75*	*640*	*0*	*0*	*805*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*83*	*711*	*0*	*0*	*894*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*145*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*161*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*83*				*161*			
C (m) (vph)	*759*				*67*			
v/c	*0.11*				*2.40*			
95% queue length	*0.37*				*15.62*			
Control Delay	*10.3*				*771.6*			
LOS	*B*				*F*			
Approach Delay	--	--	*771.6*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 2

AND

C-1 SECTION & C-2 SECTION ONLY

2028 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.98	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1835	1583		1820	1583		3484		1770	1857	
Flt Permitted		0.92	1.00		0.86	1.00		0.81		0.95	1.00	
Satd. Flow (perm)		1711	1583		1596	1583		2841		1770	1857	
Volume (vph)	15	35	20	45	50	125	40	345	30	285	750	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	39	22	50	56	139	44	383	33	317	833	17
RTOR Reduction (vph)	0	0	16	0	0	63	0	0	0	0	0	0
Lane Group Flow (vph)	0	56	6	0	106	76	0	460	0	317	850	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		23.9	23.9		23.9	47.4		21.4		23.5	49.9	
Effective Green, g (s)		24.9	24.9		24.9	49.4		22.4		24.5	50.9	
Actuated g/C Ratio		0.28	0.28		0.28	0.55		0.25		0.27	0.57	
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)		473	438		442	869		707		482	1050	
v/s Ratio Prot			0.00			0.05				0.18	c0.46	
v/s Ratio Perm		0.03			c0.07			0.16				
v/c Ratio		0.12	0.01		0.24	0.09		0.65		0.66	0.81	
Uniform Delay, d1		24.3	23.6		25.2	9.6		30.3		29.0	15.7	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1		1.3	0.0		2.2		3.2	4.7	
Delay (s)		24.9	23.7		26.5	9.7		32.4		32.3	20.4	
Level of Service		C	C		C	A		C		C	C	
Approach Delay (s)		24.5			16.9			32.4			23.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.89			0.99			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.98	
Satd. Flow (prot)	1770	1863			1645			1849			1811	
Flt Permitted	0.39	1.00			0.98			0.97			0.73	
Satd. Flow (perm)	717	1863			1614			1790			1349	
Volume (vph)	25	35	0	15	15	160	10	230	10	380	405	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	39	0	17	17	178	11	256	11	422	450	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	28	39	0	0	212	0	0	278	0	0	905	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.8	15.8			15.8			64.7			64.7	
Effective Green, g (s)	16.8	16.8			16.8			65.7			65.7	
Actuated g/C Ratio	0.19	0.19			0.19			0.73			0.73	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	133	346			300			1299			979	
v/s Ratio Prot		0.02										
v/s Ratio Perm	0.04				c0.13			0.16			c0.67	
v/c Ratio	0.21	0.11			0.71			0.21			0.92	
Uniform Delay, d1	31.2	30.7			34.5			4.0			10.3	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.8	0.1			7.4			0.4			15.5	
Delay (s)	32.0	30.8			41.9			4.4			25.8	
Level of Service	C	C			D			A			C	
Approach Delay (s)		31.3			41.9			4.4			25.8	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.6%	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		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.90			0.98			0.98	
Flt Protected		0.97			0.99			0.99			0.97	
Satd. Flow (prot)		1727			1615			1742			1711	
Flt Permitted		0.66			0.94			0.82			0.70	
Satd. Flow (perm)		1173			1533			1445			1248	
Volume (vph)	45	20	5	40	35	185	5	20	5	300	70	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	22	6	44	39	206	6	22	6	333	78	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	78	0	0	289	0	0	34	0	0	467	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.2			12.2			3.8			31.6	
Effective Green, g (s)		13.2			13.2			4.8			32.6	
Actuated g/C Ratio		0.25			0.25			0.09			0.61	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		288			376			129			961	
v/s Ratio Prot											c0.22	
v/s Ratio Perm		0.07			c0.19			0.02			c0.08	
v/c Ratio		0.27			0.77			0.26			0.49	
Uniform Delay, d1		16.4			18.9			22.9			5.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			9.1			1.1			0.4	
Delay (s)		16.9			28.0			23.9			6.3	
Level of Service		B			C			C			A	
Approach Delay (s)		16.9			28.0			23.9			6.3	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.93			1.00	0.85		1.00	0.85		0.98	
Flt Protected		1.00			1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1729			1859	1583		1811	1583		1812	
Flt Permitted		0.95			0.97	1.00		0.61	1.00		0.83	
Satd. Flow (perm)		1648			1816	1583		1144	1583		1513	
Volume (vph)	40	185	225	10	235	60	215	165	20	45	190	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	206	250	11	261	67	239	183	22	50	211	44
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	500	0	0	272	67	0	422	22	0	305	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		32.5			32.5	32.5		35.3	35.3		35.3	
Effective Green, g (s)		36.5			36.5	36.5		39.3	39.3		39.3	
Actuated g/C Ratio		0.41			0.41	0.41		0.44	0.44		0.44	
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)		668			736	642		500	691		661	
v/s Ratio Prot												
v/s Ratio Perm		c0.30			0.15	0.04		c0.37	0.01		0.20	
v/c Ratio		0.75			0.37	0.10		0.84	0.03		0.46	
Uniform Delay, d1		22.8			18.7	16.6		22.6	14.5		17.9	
Progression Factor		1.00			1.00	1.00		0.61	0.69		1.00	
Incremental Delay, d2		4.6			0.3	0.1		14.0	0.1		0.5	
Delay (s)		27.4			19.0	16.7		27.8	10.1		18.4	
Level of Service		C			B	B		C	B		B	
Approach Delay (s)		27.4			18.6			26.9			18.4	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

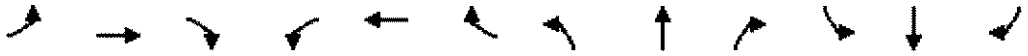
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.98			1.00	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1705			1805			1823			1854	
Flt Permitted		0.99			0.64			0.90			0.96	
Satd. Flow (perm)		1689			1175			1644			1779	
Volume (vph)	10	105	185	35	105	25	60	365	55	25	395	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	117	206	39	117	28	67	406	61	28	439	6
RTOR Reduction (vph)	0	67	0	0	7	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	267	0	0	177	0	0	531	0	0	473	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.2			17.2			56.6			56.6	
Effective Green, g (s)		18.2			18.2			57.6			57.6	
Actuated g/C Ratio		0.20			0.20			0.64			0.64	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		342			238			1052			1139	
v/s Ratio Prot												
v/s Ratio Perm		c0.16			0.15			c0.32			0.27	
v/c Ratio		0.78			0.74			0.50			0.41	
Uniform Delay, d1		34.0			33.7			8.6			7.9	
Progression Factor		1.00			1.00			0.31			0.72	
Incremental Delay, d2		11.0			11.8			0.4			0.8	
Delay (s)		45.0			45.5			3.1			6.5	
Level of Service		D			D			A			A	
Approach Delay (s)		45.0			45.5			3.1			6.5	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	12	11	12	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.89			0.99			0.99			1.00	
Flt Protected		1.00			0.98			0.99			1.00	
Satd. Flow (prot)		1595			1751			1766			1797	
Flt Permitted		1.00			0.47			0.83			0.99	
Satd. Flow (perm)		1588			832			1479			1779	
Volume (vph)	5	50	300	80	100	10	85	470	55	10	600	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	56	333	89	111	11	94	522	61	11	667	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	395	0	0	211	0	0	677	0	0	684	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.3			23.3			50.5			50.5	
Effective Green, g (s)		24.3			24.3			51.5			51.5	
Actuated g/C Ratio		0.27			0.27			0.57			0.57	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		429			225			846			1018	
v/s Ratio Prot												
v/s Ratio Perm		0.25			c0.25			c0.46			0.38	
v/c Ratio		0.92			0.94			0.80			0.67	
Uniform Delay, d1		31.9			32.1			15.2			13.4	
Progression Factor		1.00			1.00			1.00			1.03	
Incremental Delay, d2		25.0			42.5			7.8			3.0	
Delay (s)		56.9			74.6			23.0			16.7	
Level of Service		E			E			C			B	
Approach Delay (s)		56.9			74.6			23.0			16.7	
Approach LOS		E			E			C			B	

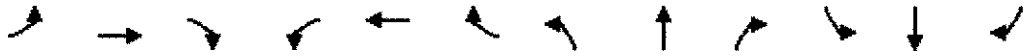
Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.98	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1835	1583		1820	1583		3484		1770	1858	
Flt Permitted		0.87	1.00		0.82	1.00		0.82		0.95	1.00	
Satd. Flow (perm)		1628	1583		1531	1583		2874		1770	1858	
Volume (vph)	15	35	20	45	50	125	40	345	30	210	825	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	39	22	50	56	139	44	383	33	233	917	17
RTOR Reduction (vph)	0	0	19	0	0	87	0	0	0	0	0	0
Lane Group Flow (vph)	0	56	3	0	106	52	0	460	0	233	934	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		7.1	7.1		7.1	19.8		18.6		12.7	36.3	
Effective Green, g (s)		8.1	8.1		8.1	21.8		19.6		13.7	37.3	
Actuated g/C Ratio		0.14	0.14		0.14	0.37		0.34		0.24	0.64	
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)		227	220		213	593		968		417	1191	
v/s Ratio Prot			0.00			0.03				0.13	c0.50	
v/s Ratio Perm		0.03			c0.07			0.16				
v/c Ratio		0.25	0.01		0.50	0.09		0.48		0.56	0.78	
Uniform Delay, d1		22.3	21.6		23.2	11.8		15.2		19.6	7.5	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0		1.8	0.1		0.4		1.6	3.5	
Delay (s)		22.9	21.6		25.0	11.8		15.6		21.2	11.0	
Level of Service		C	C		C	B		B		C	B	
Approach Delay (s)		22.5			17.5			15.6			13.0	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.8%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.89			1.00			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.98	
Satd. Flow (prot)	1770	1863			1651			1851			1823	
Flt Permitted	0.43	1.00			0.97			0.97			0.77	
Satd. Flow (perm)	805	1863			1614			1791			1430	
Volume (vph)	25	35	0	15	15	130	10	260	10	305	555	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	39	0	17	17	144	11	289	11	339	617	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	28	39	0	0	178	0	0	311	0	0	989	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.6	14.6			14.6			66.8			66.8	
Effective Green, g (s)	15.6	15.6			15.6			67.8			67.8	
Actuated g/C Ratio	0.17	0.17			0.17			0.74			0.74	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	137	318			275			1329			1061	
v/s Ratio Prot		0.02										
v/s Ratio Perm	0.03				c0.11			0.17			c0.69	
v/c Ratio	0.20	0.12			0.65			0.23			0.93	
Uniform Delay, d1	32.6	32.1			35.3			3.7			9.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.7	0.2			5.2			0.4			15.5	
Delay (s)	33.3	32.3			40.5			4.1			25.3	
Level of Service	C	C			D			A			C	
Approach Delay (s)		32.7			40.5			4.1			25.3	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.90			0.98			0.99	
Flt Protected		0.97			0.99			0.99			0.96	
Satd. Flow (prot)		1727			1609			1742			1712	
Flt Permitted		0.64			0.95			0.82			0.70	
Satd. Flow (perm)		1146			1541			1450			1249	
Volume (vph)	45	20	5	40	35	215	5	20	5	450	70	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	22	6	44	39	239	6	22	6	500	78	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	78	0	0	322	0	0	34	0	0	634	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.2			18.2			7.2			42.6	
Effective Green, g (s)		19.2			19.2			8.2			43.6	
Actuated g/C Ratio		0.27			0.27			0.12			0.62	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		311			418			168			975	
v/s Ratio Prot											c0.29	
v/s Ratio Perm		0.07			c0.21			0.02			c0.11	
v/c Ratio		0.25			0.77			0.20			0.65	
Uniform Delay, d1		20.2			23.8			28.3			8.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			8.5			0.6			1.6	
Delay (s)		20.6			32.3			28.9			10.3	
Level of Service		C			C			C			B	
Approach Delay (s)		20.6			32.3			28.9			10.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.95			1.00	0.85		1.00	0.85		0.98	
Flt Protected		0.99			1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1753			1859	1583		1811	1583		1812	
Flt Permitted		0.94			0.98	1.00		0.65	1.00		0.89	
Satd. Flow (perm)		1658			1824	1583		1216	1583		1627	
Volume (vph)	40	185	150	10	235	60	215	165	20	45	190	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	206	167	11	261	67	239	183	22	50	211	44
RTOR Reduction (vph)	0	0	0	0	0	45	0	0	12	0	0	0
Lane Group Flow (vph)	0	417	0	0	272	22	0	422	10	0	305	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		19.0			19.0	19.0		26.8	26.8		26.8	
Effective Green, g (s)		20.0			20.0	20.0		27.8	27.8		27.8	
Actuated g/C Ratio		0.33			0.33	0.33		0.46	0.46		0.46	
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)		547			602	522		558	726		746	
v/s Ratio Prot												
v/s Ratio Perm		c0.25			0.15	0.01		c0.35	0.01		0.19	
v/c Ratio		0.76			0.45	0.04		0.76	0.01		0.41	
Uniform Delay, d1		18.2			16.0	13.8		13.6	8.9		10.9	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		6.2			0.5	0.0		5.8	0.0		0.4	
Delay (s)		24.4			16.5	13.8		19.4	8.9		11.3	
Level of Service		C			B	B		B	A		B	
Approach Delay (s)		24.4			16.0			18.9			11.3	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.47	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	847	1863	1801	1583
Volume (vph)	265	20	15	390	335	715
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	294	22	17	433	372	794
RTOR Reduction (vph)	0	15	0	0	0	0
Lane Group Flow (vph)	294	7	17	433	372	794
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	34.8	34.8	69.0	69.0	69.0	69.0
Effective Green, g (s)	35.8	35.8	70.0	70.0	70.0	70.0
Actuated g/C Ratio	0.30	0.30	0.58	0.58	0.58	0.58
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)	510	472	494	1087	1051	923
v/s Ratio Prot	c0.17	0.00		0.23	0.21	
v/s Ratio Perm			0.02			c0.50
v/c Ratio	0.58	0.01	0.03	0.40	0.35	0.86
Uniform Delay, d1	35.7	29.7	10.6	13.6	13.1	20.9
Progression Factor	0.70	0.65	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.1	0.1	1.1	0.2	8.2
Delay (s)	29.7	19.4	10.8	14.7	13.3	29.1
Level of Service	C	B	B	B	B	C
Approach Delay (s)	29.0			14.5	24.1	
Approach LOS	C			B	C	

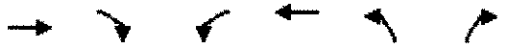
Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		1.00			0.92			0.99		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1947			1813			1972		1711	1759	
Flt Permitted		0.81			0.98			0.99		0.50	1.00	
Satd. Flow (perm)		1618			1784			1950		894	1759	
Volume (vph)	35	50	0	10	55	110	10	220	10	95	165	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	56	0	11	61	122	11	244	11	106	183	33
RTOR Reduction (vph)	0	0	0	0	90	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	95	0	0	104	0	0	264	0	106	210	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.0			11.0			23.6		34.1	34.1	
Effective Green, g (s)		12.0			12.0			24.6		35.1	35.1	
Actuated g/C Ratio		0.21			0.21			0.42		0.61	0.61	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		335			370			828		634	1066	
v/s Ratio Prot										0.02	c0.12	
v/s Ratio Perm		c0.06			0.06			c0.14		0.08		
v/c Ratio		0.28			0.28			0.32		0.17	0.20	
Uniform Delay, d1		19.3			19.3			11.1		5.4	5.1	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.5			0.4			0.2		0.1	0.1	
Delay (s)		19.8			19.7			11.3		5.6	5.2	
Level of Service		B			B			B		A	A	
Approach Delay (s)		19.8			19.7			11.3			5.3	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

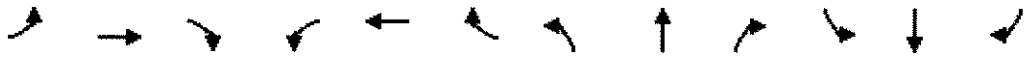


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	60	115	570	160	230	220
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	128	633	178	256	244
RTOR Reduction (vph)	0	72	0	0	0	47
Lane Group Flow (vph)	67	56	633	178	256	197
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	7.9	50.8	48.0	60.9	42.9	95.9
Effective Green, g (s)	8.9	52.8	49.0	61.9	43.9	96.9
Actuated g/C Ratio	0.07	0.44	0.41	0.52	0.37	0.81
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	138	697	723	961	648	1278
v/s Ratio Prot	c0.04	0.03	c0.36	0.10	c0.14	0.12
v/s Ratio Perm		0.01				
v/c Ratio	0.49	0.08	0.88	0.19	0.40	0.15
Uniform Delay, d1	53.4	19.5	32.7	15.6	28.2	2.5
Progression Factor	1.00	1.00	0.35	0.25	1.10	3.48
Incremental Delay, d2	2.7	0.0	6.3	0.0	1.7	0.1
Delay (s)	56.0	19.6	17.6	3.9	32.6	8.9
Level of Service	E	B	B	A	C	A
Approach Delay (s)	32.1			14.6	21.1	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	57.7%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.97		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1641			1784		1770	1828		1770	1856	
Flt Permitted		0.91			0.90		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1503			1637		1770	1828		1770	1856	
Volume (vph)	5	0	25	40	60	25	80	420	60	10	660	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	28	44	67	28	89	467	67	11	733	17
RTOR Reduction (vph)	0	25	0	0	7	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	132	0	89	531	0	11	750	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		11.5			11.5		10.3	84.1		3.2	77.0	
Effective Green, g (s)		12.5			12.5		11.3	85.1		4.2	78.0	
Actuated g/C Ratio		0.10			0.10		0.09	0.71		0.04	0.65	
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)		157			171		167	1296		62	1206	
v/s Ratio Prot							c0.05	0.29		0.01	c0.40	
v/s Ratio Perm		0.01			c0.08							
v/c Ratio		0.06			0.77		0.53	0.41		0.18	0.62	
Uniform Delay, d1		48.4			52.4		51.8	7.2		56.2	12.3	
Progression Factor		1.00			1.03		0.88	1.36		1.20	0.15	
Incremental Delay, d2		0.2			19.0		3.0	0.9		0.9	1.5	
Delay (s)		48.6			72.9		48.5	10.6		68.6	3.4	
Level of Service		D			E		D	B		E	A	
Approach Delay (s)		48.6			72.9			16.0			4.3	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

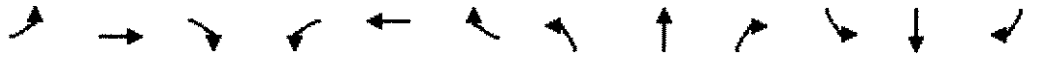


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780			1808		1770	1860		1770	1839	
Flt Permitted		0.78			0.82		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1405			1497		1770	1860		1770	1839	
Volume (vph)	35	75	35	15	65	15	80	515	5	5	660	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	83	39	17	72	17	89	572	6	6	733	67
RTOR Reduction (vph)	0	10	0	0	5	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	151	0	0	101	0	89	578	0	6	798	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		12.0			12.0		10.4	85.2		1.6	76.4	
Effective Green, g (s)		13.0			13.0		11.4	86.2		2.6	77.4	
Actuated g/C Ratio		0.11			0.11		0.10	0.72		0.02	0.65	
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)		152			162		168	1336		38	1186	
v/s Ratio Prot							c0.05	0.31		0.00	c0.43	
v/s Ratio Perm		c0.11			0.07							
v/c Ratio		0.99			0.62		0.53	0.43		0.16	0.67	
Uniform Delay, d1		53.5			51.1		51.7	6.9		57.6	13.4	
Progression Factor		1.00			1.00		0.89	1.45		1.22	0.19	
Incremental Delay, d2		71.0			7.2		2.7	0.9		1.6	2.5	
Delay (s)		124.5			58.4		48.8	10.9		71.6	5.0	
Level of Service		F			E		D	B		E	A	
Approach Delay (s)		124.5			58.4			15.9			5.5	
Approach LOS		F			E			B			A	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1825	1583		1768		1770	1843		1770	1843	
Flt Permitted		0.86	1.00		0.35		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1606	1583		652		1770	1843		1770	1843	
Volume (vph)	60	85	115	50	5	5	160	530	40	5	655	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	94	128	56	6	6	178	589	44	6	728	56
RTOR Reduction (vph)	0	0	91	0	3	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	161	37	0	65	0	178	632	0	6	782	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		12.9	12.9		12.9		17.5	84.3		1.6	68.4	
Effective Green, g (s)		13.9	13.9		13.9		18.5	85.3		2.6	69.4	
Actuated g/C Ratio		0.12	0.12		0.12		0.15	0.71		0.02	0.58	
Clearance Time (s)		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	
Lane Grp Cap (vph)		186	183		76		273	1310		38	1066	
v/s Ratio Prot							c0.10	0.34		0.00	c0.42	
v/s Ratio Perm		c0.10	0.02		0.10							
v/c Ratio		0.87	0.20		0.86		0.65	0.48		0.16	0.73	
Uniform Delay, d1		52.1	48.0		52.1		47.7	7.6		57.6	18.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.29	0.27	
Incremental Delay, d2		31.7	0.5		57.7		5.5	1.3		1.4	3.3	
Delay (s)		83.9	48.6		109.8		53.2	8.9		75.6	8.3	
Level of Service		F	D		F		D	A		E	A	
Approach Delay (s)		68.2			109.8			18.6			8.8	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.2
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		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	105	110	35	105	25	30	365	55	25	320	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	117	122	39	117	28	33	406	61	28	356	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	250	183	500	389
Volume Left (vph)	11	39	33	28
Volume Right (vph)	122	28	61	6
Hadj (s)	-0.25	-0.01	-0.03	0.04
Departure Headway (s)	7.2	7.7	6.5	6.8
Degree Utilization, x	0.50	0.39	0.90	0.73
Capacity (veh/h)	456	414	541	502
Control Delay (s)	17.2	15.5	43.1	26.2
Approach Delay (s)	17.2	15.5	43.1	26.2
Approach LOS	C	C	E	D

Intersection Summary			
Delay	29.4		
HCM Level of Service	D		
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	50	450	80	100	10	115	440	55	10	450	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	56	500	89	111	11	128	489	61	11	500	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	561	211	678	517
Volume Left (vph)	6	89	128	11
Volume Right (vph)	500	11	61	6
Hadj (s)	-0.50	0.09	0.02	0.03
Departure Headway (s)	7.9	9.7	8.5	8.5
Degree Utilization, x	1.24	0.57	1.59	1.22
Capacity (veh/h)	460	363	429	430
Control Delay (s)	150.3	24.5	299.6	144.0
Approach Delay (s)	150.3	24.5	299.6	144.0
Approach LOS	F	C	F	F

Intersection Summary			
Delay	186.6		
HCM Level of Service	F		
Intersection Capacity Utilization	111.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	120	0	10	20	90	5	50	15	120	20	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	133	0	11	22	100	6	56	17	133	22	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	156	133	78	172
Volume Left (vph)	22	11	6	133
Volume Right (vph)	0	100	17	17
Hadj (s)	0.06	-0.40	-0.08	0.13
Departure Headway (s)	4.7	4.3	4.7	4.8
Degree Utilization, x	0.21	0.16	0.10	0.23
Capacity (veh/h)	709	773	703	700
Control Delay (s)	9.0	8.1	8.3	9.3
Approach Delay (s)	9.0	8.1	8.3	9.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	15	50	5	40	20	685	20	25	1000	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	17	56	6	44	22	761	22	28	1111	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2033	1997	1114	2006	1989	772	1117			783		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2033	1997	1114	2006	1989	772	1117			783		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	90	93	0	90	89	96			97		
cM capacity (veh/h)	33	56	253	36	57	399	625			835		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	106	806	1144
Volume Left	6	56	22	28
Volume Right	17	44	22	6
cSH	83	61	625	835
Volume to Capacity	0.33	1.74	0.04	0.03
Queue Length 95th (ft)	32	243	3	3
Control Delay (s)	68.5	504.6	1.0	1.1
Lane LOS	F	F	A	A
Approach Delay (s)	68.5	504.6	1.0	1.1
Approach LOS	F	F		

Intersection Summary			
Average Delay	27.5		
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	70	75	635	20	55	980
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	83	706	22	61	1089
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.87	0.87			0.87	
vC, conflicting volume	1928	717			728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2066	675			687	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	79			92	
cM capacity (veh/h)	48	395			789	

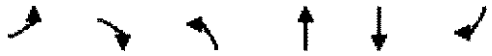
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	161	728	1150
Volume Left	78	0	61
Volume Right	83	22	0
cSH	88	1700	789
Volume to Capacity	1.83	0.43	0.08
Queue Length 95th (ft)	339	0	6
Control Delay (s)	493.8	0.0	2.6
Lane LOS	F		A
Approach Delay (s)	493.8	0.0	2.6
Approach LOS	F		

Intersection Summary			
Average Delay	40.5		
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	60	50	375	30	55	280
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	56	417	33	61	311
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.91					
vC, conflicting volume	867	433			450	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	853	433			450	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	91			94	
cM capacity (veh/h)	282	622			1110	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	122	450	372
Volume Left	67	0	61
Volume Right	56	33	0
cSH	376	1700	1110
Volume to Capacity	0.33	0.26	0.06
Queue Length 95th (ft)	35	0	4
Control Delay (s)	19.1	0.0	1.9
Lane LOS	C		A
Approach Delay (s)	19.1	0.0	1.9
Approach LOS	C		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	60	10	70	335	285	55
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	11	78	372	317	61
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	875	347	378			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	870	322	354			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	77	98	93			
cM capacity (veh/h)	289	692	1160			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	450	378
Volume Left	67	78	0
Volume Right	11	0	61
cSH	316	1160	1700
Volume to Capacity	0.25	0.07	0.22
Queue Length 95th (ft)	24	5	0
Control Delay (s)	20.1	2.0	0.0
Lane LOS	C	A	
Approach Delay (s)	20.1	2.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1841		1770	1784			1922			1730	
Flt Permitted	0.26	1.00		0.31	1.00			0.96			0.83	
Satd. Flow (perm)	463	1841		580	1784			1856			1462	
Volume (vph)	40	350	30	40	395	25	25	260	80	80	175	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	389	33	44	439	28	28	289	89	89	194	72
RTOR Reduction (vph)	0	5	0	0	3	0	0	8	0	0	7	0
Lane Group Flow (vph)	44	417	0	44	464	0	0	398	0	0	348	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	19.6	19.6		19.6	19.6			25.9			25.9	
Effective Green, g (s)	20.6	20.6		20.6	20.6			26.9			26.9	
Actuated g/C Ratio	0.34	0.34		0.34	0.34			0.45			0.45	
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)	158	629		198	609			828			652	
v/s Ratio Prot		0.23			c0.26							
v/s Ratio Perm	0.10			0.08				0.21			c0.24	
v/c Ratio	0.28	0.66		0.22	0.76			0.48			0.53	
Uniform Delay, d1	14.4	16.9		14.1	17.7			11.8			12.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	2.6		0.6	5.6			0.4			0.8	
Delay (s)	15.4	19.5		14.7	23.3			12.2			13.0	
Level of Service	B	B		B	C			B			B	
Approach Delay (s)		19.2			22.5			12.2			13.0	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.96				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1868		1652	1725				
Flt Permitted	0.32	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	645	1739			1868		1652	1725				
Volume (vph)	20	360	0	0	420	60	105	205	80	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	400	0	0	467	67	117	228	89	0	0	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	13	0	0	0	0
Lane Group Flow (vph)	22	400	0	0	527	0	117	304	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	20.1	20.1			20.1		13.2	13.2				
Effective Green, g (s)	21.1	21.1			21.1		14.2	14.2				
Actuated g/C Ratio	0.46	0.46			0.46		0.31	0.31				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	298	803			862		513	536				
v/s Ratio Prot		0.23			c0.28			c0.18				
v/s Ratio Perm	0.03						0.07					
v/c Ratio	0.07	0.50			0.61		0.23	0.57				
Uniform Delay, d1	6.9	8.6			9.2		11.7	13.2				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.5			1.3		0.2	1.4				
Delay (s)	7.0	9.1			10.5		11.9	14.6				
Level of Service	A	A			B		B	B				
Approach Delay (s)		9.0			10.5			13.8			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1670		1711	1801	1531		1628		1652	1739	1583
Flt Permitted	0.45	1.00		0.57	1.00	1.00		0.85		0.72	1.00	1.00
Satd. Flow (perm)	735	1670		1031	1801	1531		1398		1253	1739	1583
Volume (vph)	30	205	5	40	285	110	15	30	5	100	330	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	228	6	44	317	122	17	33	6	111	367	56
RTOR Reduction (vph)	0	1	0	0	0	82	0	4	0	0	0	33
Lane Group Flow (vph)	33	233	0	44	317	40	0	52	0	111	367	23
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	14.6	14.6		15.1	15.1	15.1		12.0		19.4	19.4	19.4
Effective Green, g (s)	15.6	15.6		16.1	16.1	16.1		13.0		20.4	20.4	20.4
Actuated g/C Ratio	0.32	0.32		0.33	0.33	0.33		0.26		0.41	0.41	0.41
Clearance Time (s)	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
Lane Grp Cap (vph)	232	526		335	586	498		367		544	717	652
v/s Ratio Prot		0.14			c0.18					0.01	c0.21	
v/s Ratio Perm	0.04			0.04		0.03		0.04		0.07		0.01
v/c Ratio	0.14	0.44		0.13	0.54	0.08		0.14		0.20	0.51	0.04
Uniform Delay, d1	12.2	13.5		11.8	13.7	11.6		14.0		9.4	10.8	8.7
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.6		0.2	1.0	0.1		0.2		0.2	0.6	0.0
Delay (s)	12.4	14.1		11.9	14.7	11.6		14.2		9.6	11.5	8.7
Level of Service	B	B		B	B	B		B		A	B	A
Approach Delay (s)		13.9			13.7			14.2			10.8	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	49.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1736	1478	1486	1514			1832	1794	1593	1817	
Flt Permitted		0.99	1.00	0.62	1.00			0.89	1.00	0.61	1.00	
Satd. Flow (perm)		1714	1478	974	1514			1651	1794	1028	1817	
Volume (vph)	5	190	45	20	235	65	70	140	30	20	50	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	211	50	22	261	72	78	156	33	22	56	11
RTOR Reduction (vph)	0	0	35	0	15	0	0	0	13	0	6	0
Lane Group Flow (vph)	0	217	15	22	318	0	0	234	20	22	61	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		11.1	11.1	11.1	11.1			14.9	14.9	14.9	14.9	
Effective Green, g (s)		12.1	12.1	12.1	12.1			15.9	15.9	15.9	15.9	
Actuated g/C Ratio		0.30	0.30	0.30	0.30			0.39	0.39	0.39	0.39	
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)		506	436	287	447			640	696	399	705	
v/s Ratio Prot					c0.21						0.03	
v/s Ratio Perm		0.13	0.01	0.02				c0.14	0.01	0.02		
v/c Ratio		0.43	0.03	0.08	0.71			0.37	0.03	0.06	0.09	
Uniform Delay, d1		11.7	10.3	10.4	12.9			9.0	7.8	7.9	7.9	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6	0.0	0.1	5.3			0.4	0.0	0.1	0.1	
Delay (s)		12.2	10.3	10.5	18.2			9.3	7.8	7.9	8.0	
Level of Service		B	B	B	B			A	A	A	A	
Approach Delay (s)		11.9			17.7			9.1			8.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			1.00			1.00	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1808			1926			1851			2104	
Flt Permitted		0.94			0.89			0.98			0.99	
Satd. Flow (perm)		1715			1750			1816			2091	
Volume (vph)	15	45	10	20	30	5	15	305	10	5	275	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	11	22	33	6	17	339	11	6	306	6
RTOR Reduction (vph)	0	7	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	71	0	0	61	0	0	366	0	0	317	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		343			350			704			810	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			c0.20			0.15	
v/c Ratio		0.21			0.17			0.52			0.39	
Uniform Delay, d1		26.7			26.5			18.8			17.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.1			2.7			1.4	
Delay (s)		28.1			27.6			21.5			19.1	
Level of Service		C			C			C			B	
Approach Delay (s)		28.1			27.6			21.5			19.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	80.0	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	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.95		
Satd. Flow (prot)	1888	1885		
Flt Permitted	0.95	0.95		
Satd. Flow (perm)	1888	1885		
Volume (vph)	15	375	10	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	417	11	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	433	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	495		
v/s Ratio Prot	0.01	c0.23		
v/s Ratio Perm				
v/c Ratio	0.03	0.88		
Uniform Delay, d1	22.0	28.2		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	19.1		
Delay (s)	22.1	47.3		
Level of Service	C	D		
Approach Delay (s)		46.3		
Approach LOS		D		

Intersection Summary

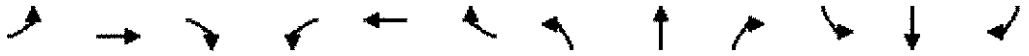
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583		1828	1583	1770	3536		1770	3511	
Flt Permitted		0.75	1.00		0.85	1.00	0.27	1.00		0.29	1.00	
Satd. Flow (perm)		1397	1583		1583	1583	499	3536		534	3511	
Volume (vph)	60	20	85	15	25	15	80	895	5	10	715	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	22	94	17	28	17	89	994	6	11	794	44
RTOR Reduction (vph)	0	0	83	0	0	15	0	1	0	0	4	0
Lane Group Flow (vph)	0	89	11	0	45	2	89	999	0	11	834	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		6.5	6.5		6.5	6.5	41.3	41.3		32.7	32.7	
Effective Green, g (s)		6.5	6.5		6.5	6.5	41.3	41.3		32.7	32.7	
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.74	0.74		0.59	0.59	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		163	184		184	184	474	2617		313	2058	
v/s Ratio Prot							0.02	c0.28			0.24	
v/s Ratio Perm		c0.06	0.01		0.03	0.00	0.12			0.02		
v/c Ratio		0.55	0.06		0.24	0.01	0.19	0.38		0.04	0.41	
Uniform Delay, d1		23.3	21.9		22.4	21.8	2.6	2.6		4.9	6.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.7	0.1		0.7	0.0	0.2	0.1		0.0	0.1	
Delay (s)		27.0	22.1		23.1	21.8	2.8	2.7		4.9	6.4	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		24.4			22.8			2.7			6.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3299		1652	3271	
Flt Permitted		0.75	1.00	0.71	1.00		0.27	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		464	3299		1652	3271	
Volume (vph)	50	10	220	15	5	10	75	1050	10	10	735	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	244	17	6	11	83	1167	11	11	817	56
RTOR Reduction (vph)	0	0	217	0	10	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	67	27	17	7	0	83	1178	0	11	867	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		624	2207		21	1367	
v/s Ratio Prot					0.00		0.04	c0.36		0.01	c0.27	
v/s Ratio Perm		c0.05	0.02	0.01			0.05					
v/c Ratio		0.45	0.17	0.11	0.03		0.13	0.53		0.52	0.63	
Uniform Delay, d1		29.1	28.2	28.0	27.8		6.7	6.0		34.4	16.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		0.4	0.9		10.4	2.3	
Delay (s)		29.9	28.4	28.2	27.8		7.1	6.9		44.8	18.4	
Level of Service		C	C	C	C		A	A		D	B	
Approach Delay (s)		28.7			28.0			6.9			18.7	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1285	50	0	0	780	0	0	1045	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1428	56	0	0	867	0	0	1161	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	722	762	0	0	867	0	0	1161	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.1	28.1			26.7			26.7	
Effective Green, g (s)				30.1	30.1			28.7			28.7	
Actuated g/C Ratio				0.45	0.45			0.43			0.43	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				757	762			1520			1520	
v/s Ratio Prot								0.24			c0.33	
v/s Ratio Perm				0.43	0.45							
v/c Ratio				0.95	1.00			0.57			0.76	
Uniform Delay, d1				17.7	18.3			14.4			16.2	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				22.0	32.6			0.5			2.3	
Delay (s)				39.6	51.0			14.9			18.5	
Level of Service				D	D			B			B	
Approach Delay (s)		0.0			45.4			14.9			18.5	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	8.0
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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	70	35	25	145	10	45	320	60	5	155	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	78	39	28	161	11	50	356	67	6	172	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	122	200	472	189
Volume Left (vph)	6	28	50	6
Volume Right (vph)	39	11	67	11
Hadj (s)	-0.15	0.03	-0.03	0.00
Departure Headway (s)	6.0	6.0	5.2	5.6
Degree Utilization, x	0.20	0.33	0.68	0.30
Capacity (veh/h)	508	541	667	581
Control Delay (s)	10.5	11.9	18.4	11.0
Approach Delay (s)	10.5	11.9	18.4	11.0
Approach LOS	B	B	C	B

Intersection Summary			
Delay	14.7		
HCM Level of Service	B		
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	80	5	405	215	5	480
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	89	6	450	239	6	533
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	1.00					
vC, conflicting volume	1114	569			689	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1114	569			689	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	61	99			99	
cM capacity (veh/h)	228	521			905	

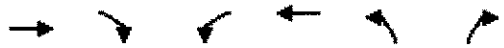
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	689	539
Volume Left	89	0	6
Volume Right	6	239	0
cSH	236	1700	905
Volume to Capacity	0.40	0.41	0.01
Queue Length 95th (ft)	45	0	0
Control Delay (s)	30.1	0.0	0.2
Lane LOS	D		A
Approach Delay (s)	30.1	0.0	0.2
Approach LOS	D		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	0	55	10	0	10	35	920	5	5	725	90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	0	61	11	0	11	39	1022	6	6	806	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1467	1972	453	1578	2019	514	906			1028		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1467	1972	453	1578	2019	514	906			1028		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	60	100	89	82	100	98	95			99		
cM capacity (veh/h)	83	58	554	63	54	506	747			671		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	94	22	550	517	408	503
Volume Left	33	11	39	0	6	0
Volume Right	61	11	0	6	0	100
cSH	185	111	747	1700	671	1700
Volume to Capacity	0.51	0.20	0.05	0.30	0.01	0.30
Queue Length 95th (ft)	64	18	4	0	1	0
Control Delay (s)	43.2	45.2	1.4	0.0	0.3	0.0
Lane LOS	E	E	A		A	
Approach Delay (s)	43.2	45.2	0.7		0.1	
Approach LOS	E	E				

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	215	35	135	85	10	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	239	39	150	94	11	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			278		653	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			278		653	258
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		97	94
cM capacity (veh/h)			1285		382	780

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	278	244	61
Volume Left	0	150	11
Volume Right	39	0	50
cSH	1700	1285	656
Volume to Capacity	0.16	0.12	0.09
Queue Length 95th (ft)	0	10	8
Control Delay (s)	0.0	5.4	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	5.4	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 RSG C1 & C2 Only*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*635*	*305*	*10*	*535*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*705*	*338*	*11*	*594*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*60*	*0*	*20*	*85*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*66*	*0*	*22*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*11*			*66*			*116*
C (m) (vph)		*663*			*499*			*260*
v/c		*0.02*			*0.13*			*0.45*
95% queue length		*0.05*			*0.45*			*2.16*
Control Delay		*10.5*			*13.3*			*29.5*
LOS		*B*			*B*			*D*
Approach Delay	--	--	*13.3*			*29.5*		
Approach LOS	--	--	*B*			*D*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 RSG C1 & C2 Only*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*60*	*575*	*0*	*0*	*560*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*66*	*638*	*0*	*0*	*622*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*200*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*222*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

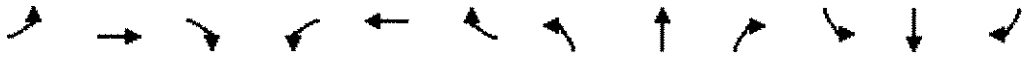
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*66*				*222*			
C (m) (vph)	*959*				*126*			
v/c	*0.07*				*1.76*			
95% queue length	*0.22*				*16.92*			
Control Delay	*9.0*				*433.1*			
LOS	*A*				*F*			
Approach Delay	--	--	*433.1*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 2

AND

C-1 SECTION & C-2 SECTION ONLY

2028 PM PEAK HOUR



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1830	1583		1811	1583		3434		1770	1843	
Flt Permitted		0.86	1.00		0.78	1.00		0.83		0.95	1.00	
Satd. Flow (perm)		1607	1583		1462	1583		2867		1770	1843	
Volume (vph)	25	45	45	105	80	520	60	340	75	305	385	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	50	50	117	89	578	67	378	83	339	428	33
RTOR Reduction (vph)	0	0	36	0	0	257	0	0	0	0	0	0
Lane Group Flow (vph)	0	78	14	0	206	321	0	528	0	339	461	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		24.2	24.2		24.2	48.0		20.8		23.8	49.6	
Effective Green, g (s)		25.2	25.2		25.2	50.0		21.8		24.8	50.6	
Actuated g/C Ratio		0.28	0.28		0.28	0.56		0.24		0.28	0.56	
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)		450	443		409	879		694		488	1036	
v/s Ratio Prot			0.01			0.20				c0.19	0.25	
v/s Ratio Perm		0.05			c0.14			c0.18				
v/c Ratio		0.17	0.03		0.50	0.37		0.76		0.69	0.44	
Uniform Delay, d1		24.5	23.5		27.2	11.2		31.7		29.2	11.5	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.1		4.4	0.3		4.9		4.3	0.3	
Delay (s)		25.4	23.7		31.5	11.4		36.6		33.5	11.8	
Level of Service		C	C		C	B		D		C	B	
Approach Delay (s)		24.7			16.7			36.6			21.0	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.88			0.98			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.99	
Satd. Flow (prot)	1770	1836			1644			1815			1822	
Flt Permitted	0.34	1.00			0.99			0.91			0.84	
Satd. Flow (perm)	628	1836			1635			1666			1559	
Volume (vph)	50	50	5	10	35	275	25	150	30	140	350	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	56	6	11	39	306	28	167	33	156	389	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	56	62	0	0	356	0	0	228	0	0	584	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.2	22.2			22.2			48.9			48.9	
Effective Green, g (s)	23.2	23.2			23.2			49.9			49.9	
Actuated g/C Ratio	0.29	0.29			0.29			0.62			0.62	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	180	525			468			1025			959	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.09				c0.22			0.14			c0.37	
v/c Ratio	0.31	0.12			0.76			0.22			0.61	
Uniform Delay, d1	22.7	21.4			26.4			7.0			9.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.0	0.1			7.2			0.5			2.9	
Delay (s)	23.7	21.5			33.6			7.5			12.5	
Level of Service	C	C			C			A			B	
Approach Delay (s)		22.5			33.6			7.5			12.5	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.90			0.95			0.98	
Flt Protected		0.98			1.00			1.00			0.96	
Satd. Flow (prot)		1747			1609			1720			1700	
Flt Permitted		0.73			0.98			1.00			0.52	
Satd. Flow (perm)		1313			1587			1720			914	
Volume (vph)	50	50	5	5	25	105	0	50	25	290	25	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	56	6	6	28	117	0	56	28	322	28	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	118	0	0	151	0	0	84	0	0	406	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.1			8.1			9.5			39.2	
Effective Green, g (s)		9.1			9.1			10.5			40.2	
Actuated g/C Ratio		0.16			0.16			0.18			0.70	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		209			252			315			994	
v/s Ratio Prot								0.05			c0.18	
v/s Ratio Perm		0.09			c0.10						c0.10	
v/c Ratio		0.56			0.60			0.27			0.41	
Uniform Delay, d1		22.3			22.4			20.1			3.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.5			3.8			0.5			0.3	
Delay (s)		25.7			26.2			20.6			3.9	
Level of Service		C			C			C			A	
Approach Delay (s)		25.7			26.2			20.6			3.9	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

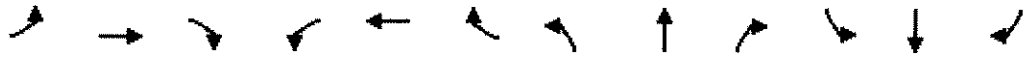
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.96			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1794			1846	1583		1799	1583		1824	
Flt Permitted		0.99			0.78	1.00		0.60	1.00		0.74	
Satd. Flow (perm)		1770			1457	1583		1111	1583		1375	
Volume (vph)	10	255	95	65	290	40	260	105	60	65	170	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	283	106	72	322	44	289	117	67	72	189	17
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	400	0	0	394	44	0	406	67	0	278	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		42.2			42.2	42.2		55.6	55.6		55.6	
Effective Green, g (s)		46.2			46.2	46.2		59.6	59.6		59.6	
Actuated g/C Ratio		0.39			0.39	0.39		0.50	0.50		0.50	
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)		681			561	609		552	786		683	
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.27	0.03		c0.37	0.04		0.20	
v/c Ratio		0.59			0.70	0.07		0.74	0.09		0.41	
Uniform Delay, d1		29.3			31.1	23.3		23.9	15.9		19.1	
Progression Factor		1.00			1.00	1.00		0.55	0.55		1.00	
Incremental Delay, d2		1.3			4.0	0.1		4.9	0.1		0.4	
Delay (s)		30.6			35.1	23.4		18.2	8.8		19.4	
Level of Service		C			D	C		B	A		B	
Approach Delay (s)		30.6			33.9			16.8			19.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.98			0.99			1.00	
Flt Protected		1.00			0.99			0.98			1.00	
Satd. Flow (prot)		1711			1813			1824			1847	
Flt Permitted		0.99			0.60			0.75			0.91	
Satd. Flow (perm)		1703			1099			1385			1693	
Volume (vph)	5	130	200	50	160	30	185	390	25	30	290	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	144	222	56	178	33	206	433	28	33	322	11
RTOR Reduction (vph)	0	46	0	0	5	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	326	0	0	262	0	0	666	0	0	365	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.2			28.2			75.6			75.6	
Effective Green, g (s)		29.2			29.2			76.6			76.6	
Actuated g/C Ratio		0.24			0.24			0.64			0.64	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		414			267			884			1081	
v/s Ratio Prot												
v/s Ratio Perm		0.19			c0.24			c0.48			0.22	
v/c Ratio		0.79			0.98			0.75			0.34	
Uniform Delay, d1		42.5			45.2			15.1			10.0	
Progression Factor		1.00			1.00			0.33			0.75	
Incremental Delay, d2		9.5			50.0			0.6			0.7	
Delay (s)		52.0			95.2			5.5			8.2	
Level of Service		D			F			A			A	
Approach Delay (s)		52.0			95.2			5.5			8.2	
Approach LOS		D			F			A			A	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	12	11	12	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.95			0.99			1.00	
Flt Protected		1.00			0.98			0.99			0.99	
Satd. Flow (prot)		1650			1688			1764			1787	
Flt Permitted		0.99			0.53			0.78			0.87	
Satd. Flow (perm)		1635			913			1390			1567	
Volume (vph)	10	145	245	80	85	90	110	495	60	55	475	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	161	272	89	94	100	122	550	67	61	528	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	444	0	0	283	0	0	739	0	0	600	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		37.0			37.0			66.8			66.8	
Effective Green, g (s)		38.0			38.0			67.8			67.8	
Actuated g/C Ratio		0.32			0.32			0.56			0.56	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		518			289			785			885	
v/s Ratio Prot												
v/s Ratio Perm		0.27			c0.31			c0.53			0.38	
v/c Ratio		0.86			0.98			0.94			0.68	
Uniform Delay, d1		38.5			40.6			24.3			18.4	
Progression Factor		1.00			1.00			1.00			1.03	
Incremental Delay, d2		13.2			46.7			20.7			3.5	
Delay (s)		51.6			87.3			44.9			22.5	
Level of Service		D			F			D			C	
Approach Delay (s)		51.6			87.3			44.9			22.5	
Approach LOS		D			F			D			C	

Intersection Summary			
HCM Average Control Delay	45.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1830	1583		1811	1583		3452		1770	1843	
Flt Permitted		0.85	1.00		0.78	1.00		0.86		0.95	1.00	
Satd. Flow (perm)		1575	1583		1454	1583		2977		1770	1843	
Volume (vph)	25	45	45	105	80	420	60	440	75	305	385	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	50	50	117	89	467	67	489	83	339	428	33
RTOR Reduction (vph)	0	0	39	0	0	227	0	0	0	0	0	0
Lane Group Flow (vph)	0	78	11	0	206	240	0	639	0	339	461	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		12.3	12.3		12.3	23.6		17.9		11.3	34.2	
Effective Green, g (s)		13.3	13.3		13.3	25.6		18.9		12.3	35.2	
Actuated g/C Ratio		0.22	0.22		0.22	0.42		0.31		0.20	0.57	
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)		341	342		314	659		915		354	1055	
v/s Ratio Prot			0.01			0.15				c0.19	0.25	
v/s Ratio Perm		0.05			c0.14			c0.21				
v/c Ratio		0.23	0.03		0.66	0.36		0.70		0.96	0.44	
Uniform Delay, d1		19.9	19.0		22.0	12.3		18.8		24.3	7.5	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.0		4.9	0.3		2.3		36.4	0.3	
Delay (s)		20.2	19.1		26.9	12.7		21.1		60.7	7.8	
Level of Service		C	B		C	B		C		E	A	
Approach Delay (s)		19.8			17.0			21.1			30.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.1%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.90			0.99			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1836			1673			1841			1822	
Flt Permitted	0.41	1.00			0.98			0.96			0.76	
Satd. Flow (perm)	759	1836			1650			1766			1400	
Volume (vph)	50	50	5	10	35	125	25	400	30	140	350	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	56	6	11	39	139	28	444	33	156	389	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	56	62	0	0	189	0	0	505	0	0	584	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.8	14.8			14.8			65.5			65.5	
Effective Green, g (s)	15.8	15.8			15.8			66.5			66.5	
Actuated g/C Ratio	0.17	0.17			0.17			0.74			0.74	
Clearance Time (s)	5.0	5.0			5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	133	321			289			1301			1031	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.07				c0.11			0.29			c0.42	
v/c Ratio	0.42	0.19			0.65			0.39			0.57	
Uniform Delay, d1	33.2	31.8			34.7			4.4			5.4	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	2.1	0.3			5.2			0.9			2.3	
Delay (s)	35.3	32.1			39.9			5.3			7.6	
Level of Service	D	C			D			A			A	
Approach Delay (s)		33.6			39.9			5.3			7.6	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

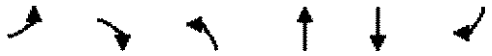
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.88			0.95			0.98	
Flt Protected		0.98			1.00			1.00			0.96	
Satd. Flow (prot)		1747			1576			1720			1700	
Flt Permitted		0.70			1.00			1.00			0.56	
Satd. Flow (perm)		1254			1572			1720			986	
Volume (vph)	50	50	5	5	25	355	0	50	25	290	25	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	56	6	6	28	394	0	56	28	322	28	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	118	0	0	428	0	0	84	0	0	406	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		20.1			20.1			13.3			31.0	
Effective Green, g (s)		21.1			21.1			14.3			32.0	
Actuated g/C Ratio		0.35			0.35			0.23			0.52	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		433			543			403			676	
v/s Ratio Prot								0.05			c0.13	
v/s Ratio Perm		0.09			c0.27						c0.18	
v/c Ratio		0.27			0.79			0.21			0.60	
Uniform Delay, d1		14.5			18.0			18.8			10.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			7.5			0.3			1.5	
Delay (s)		14.8			25.5			19.1			11.6	
Level of Service		B			C			B			B	
Approach Delay (s)		14.8			25.5			19.1			11.6	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.3%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.96			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		0.97	1.00		0.99	
Satd. Flow (prot)		1794			1846	1583		1808	1583		1824	
Flt Permitted		0.99			0.86	1.00		0.67	1.00		0.85	
Satd. Flow (perm)		1771			1601	1583		1243	1583		1576	
Volume (vph)	10	255	95	65	290	40	160	105	60	65	170	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	283	106	72	322	44	178	117	67	72	189	17
RTOR Reduction (vph)	0	0	0	0	0	28	0	0	40	0	0	0
Lane Group Flow (vph)	0	400	0	0	394	16	0	295	27	0	278	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		18.9			18.9	18.9		21.3	21.3		21.3	
Effective Green, g (s)		19.9			19.9	19.9		22.3	22.3		22.3	
Actuated g/C Ratio		0.36			0.36	0.36		0.41	0.41		0.41	
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)		641			579	573		504	642		639	
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.25	0.01		c0.24	0.02		0.18	
v/c Ratio		0.62			0.68	0.03		0.59	0.04		0.44	
Uniform Delay, d1		14.5			14.9	11.3		12.7	9.9		11.8	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		1.9			3.3	0.0		1.7	0.0		0.5	
Delay (s)		16.4			18.1	11.3		14.5	9.9		12.3	
Level of Service		B			B	B		B	A		B	
Approach Delay (s)		16.4			17.5			13.6			12.3	
Approach LOS		B			B			B			B	

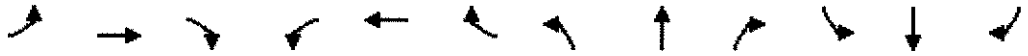
Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.29	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	518	1863	1801	1583
Volume (vph)	405	60	15	330	505	610
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	450	67	17	367	561	678
RTOR Reduction (vph)	0	33	0	0	0	0
Lane Group Flow (vph)	450	34	17	367	561	678
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	56.8	56.8	77.0	77.0	77.0	77.0
Effective Green, g (s)	57.8	57.8	78.0	78.0	78.0	78.0
Actuated g/C Ratio	0.39	0.39	0.52	0.52	0.52	0.52
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)	659	610	269	969	937	823
v/s Ratio Prot	c0.26	0.02		0.20	0.31	
v/s Ratio Perm			0.03			c0.43
v/c Ratio	0.68	0.06	0.06	0.38	0.60	0.82
Uniform Delay, d1	38.5	29.0	17.9	21.5	25.1	30.2
Progression Factor	0.71	0.67	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	0.2	0.5	1.1	1.0	6.7
Delay (s)	32.5	19.5	18.3	22.6	26.1	36.9
Level of Service	C	B	B	C	C	D
Approach Delay (s)	30.8			22.5	32.0	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



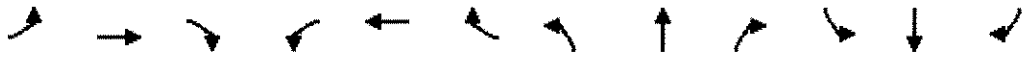
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.91			0.97		1.00	0.98	
Flt Protected		0.99			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		1922			1810			1923		1711	1762	
Flt Permitted		0.83			0.96			0.92		0.61	1.00	
Satd. Flow (perm)		1609			1748			1791		1106	1762	
Volume (vph)	40	80	20	25	80	180	15	70	20	175	235	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	89	22	28	89	200	17	78	22	194	261	44
RTOR Reduction (vph)	0	8	0	0	84	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	147	0	0	233	0	0	106	0	194	298	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.6			11.6			11.7		23.0	23.0	
Effective Green, g (s)		12.6			12.6			12.7		24.0	24.0	
Actuated g/C Ratio		0.27			0.27			0.27		0.51	0.51	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		429			466			481		655	894	
v/s Ratio Prot										0.05	c0.17	
v/s Ratio Perm		0.09			c0.13			0.06		0.10		
v/c Ratio		0.34			0.50			0.22		0.30	0.33	
Uniform Delay, d1		14.0			14.7			13.5		6.8	6.9	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.5			0.8			0.2		0.3	0.2	
Delay (s)		14.5			15.5			13.7		7.0	7.1	
Level of Service		B			B			B		A	A	
Approach Delay (s)		14.5			15.5			13.7			7.1	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	160	350	540	85	165	310
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	178	389	600	94	183	344
RTOR Reduction (vph)	0	196	0	0	0	76
Lane Group Flow (vph)	178	193	600	94	183	268
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	17.8	69.5	59.3	82.1	51.7	116.0
Effective Green, g (s)	18.8	71.5	60.3	83.1	52.7	117.0
Actuated g/C Ratio	0.13	0.48	0.40	0.55	0.35	0.78
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	233	755	712	1032	622	1235
v/s Ratio Prot	c0.10	0.09	c0.34	0.05	c0.10	0.17
v/s Ratio Perm		0.03				
v/c Ratio	0.76	0.26	0.84	0.09	0.29	0.22
Uniform Delay, d1	63.5	23.4	40.6	15.7	35.2	4.4
Progression Factor	1.00	1.00	0.24	0.06	0.97	5.33
Incremental Delay, d2	13.8	0.2	5.3	0.0	1.1	0.1
Delay (s)	77.3	23.6	15.0	1.0	35.1	23.4
Level of Service	E	C	B	A	D	C
Approach Delay (s)	40.4			13.1	27.5	
Approach LOS	D			B	C	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.88			0.97		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1630			1760		1770	1833		1770	1860	
Flt Permitted		0.97			0.47		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1591			843		1770	1833		1770	1860	
Volume (vph)	10	0	80	30	10	10	5	455	55	15	865	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	0	89	33	11	11	6	506	61	17	961	11
RTOR Reduction (vph)	0	82	0	0	6	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	18	0	0	49	0	6	565	0	17	972	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		11.4			11.4		1.6	114.2		3.2	115.8	
Effective Green, g (s)		12.4			12.4		2.6	115.2		4.2	116.8	
Actuated g/C Ratio		0.08			0.08		0.02	0.77		0.03	0.78	
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)		132			70		31	1408		50	1448	
v/s Ratio Prot							0.00	0.31		c0.01	c0.52	
v/s Ratio Perm		0.01			c0.06							
v/c Ratio		0.14			0.69		0.19	0.40		0.34	0.67	
Uniform Delay, d1		63.8			67.0		72.7	5.8		71.5	7.7	
Progression Factor		1.00			1.04		0.94	0.66		1.14	0.53	
Incremental Delay, d2		0.5			24.1		2.6	0.7		3.0	1.9	
Delay (s)		64.3			93.9		70.7	4.6		84.3	6.0	
Level of Service		E			F		E	A		F	A	
Approach Delay (s)		64.3			93.9			5.3			7.3	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.99		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1767			1819		1770	1859		1770	1847	
Flt Permitted		0.71			0.83		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1281			1531		1770	1859		1770	1847	
Volume (vph)	110	130	85	25	100	15	80	390	5	10	910	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	144	94	28	111	17	89	433	6	11	1011	61
RTOR Reduction (vph)	0	9	0	0	3	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	351	0	0	153	0	89	439	0	11	1071	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		32.0			32.0		12.1	93.6		3.2	84.7	
Effective Green, g (s)		33.0			33.0		13.1	94.6		4.2	85.7	
Actuated g/C Ratio		0.22			0.22		0.09	0.63		0.03	0.57	
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)		282			337		155	1172		50	1055	
v/s Ratio Prot							c0.05	0.24		0.01	c0.58	
v/s Ratio Perm		c0.27			0.10							
v/c Ratio		1.25			0.45		0.57	0.37		0.22	1.01	
Uniform Delay, d1		58.5			50.7		65.8	13.4		71.3	32.1	
Progression Factor		1.00			1.00		1.03	1.20		1.21	0.48	
Incremental Delay, d2		136.9			1.0		4.6	0.8		1.7	28.2	
Delay (s)		195.4			51.7		72.4	16.8		88.2	43.7	
Level of Service		F			D		E	B		F	D	
Approach Delay (s)		195.4			51.7			26.2			44.1	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM Average Control Delay	65.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.97		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791	1583		1797		1770	1813		1770	1848	
Flt Permitted		0.68	1.00		0.57		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1258	1583		1065		1770	1813		1770	1848	
Volume (vph)	80	20	130	95	50	5	105	395	85	5	965	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	89	22	144	106	56	6	117	439	94	6	1072	61
RTOR Reduction (vph)	0	0	119	0	1	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	111	25	0	167	0	117	530	0	6	1132	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		19.0	19.0		19.0		14.1	108.2		1.6	95.7	
Effective Green, g (s)		20.0	20.0		20.0		15.1	109.2		2.6	96.7	
Actuated g/C Ratio		0.13	0.13		0.13		0.10	0.73		0.02	0.64	
Clearance Time (s)		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	
Lane Grp Cap (vph)		168	211		142		178	1320		31	1191	
v/s Ratio Prot							c0.07	0.29		0.00	c0.61	
v/s Ratio Perm		0.09	0.02		c0.16							
v/c Ratio		0.66	0.12		1.18		0.66	0.40		0.19	0.95	
Uniform Delay, d1		61.8	57.2		65.0		65.0	7.8		72.7	24.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.11	0.19	
Incremental Delay, d2		9.4	0.3		130.9		8.5	0.9		0.7	5.3	
Delay (s)		71.1	57.5		195.9		73.4	8.8		81.0	9.9	
Level of Service		E	E		F		E	A		F	A	
Approach Delay (s)		63.4			195.9			20.4			10.3	
Approach LOS		E			F			C			B	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	85.6%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	130	200	50	160	30	35	290	25	30	290	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	144	222	56	178	33	39	322	28	33	322	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	372	267	389	367
Volume Left (vph)	6	56	39	33
Volume Right (vph)	222	33	28	11
Hadj (s)	-0.32	0.00	0.01	0.03
Departure Headway (s)	7.7	8.4	7.9	8.0
Degree Utilization, x	0.80	0.62	0.85	0.81
Capacity (veh/h)	440	376	440	427
Control Delay (s)	34.6	24.4	41.8	37.4
Approach Delay (s)	34.6	24.4	41.8	37.4
Approach LOS	D	C	E	E

Intersection Summary			
Delay	35.4		
HCM Level of Service	E		
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	145	245	80	85	90	360	245	60	55	475	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	161	272	89	94	100	400	272	67	61	528	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	444	283	739	600
Volume Left (vph)	11	89	400	61
Volume Right (vph)	272	100	67	11
Hadj (s)	-0.33	-0.12	0.09	0.04
Departure Headway (s)	8.6	9.4	9.0	8.9
Degree Utilization, x	1.06	0.74	1.85	1.49
Capacity (veh/h)	426	375	406	415
Control Delay (s)	90.1	35.3	411.3	257.5
Approach Delay (s)	90.1	35.3	411.3	257.5
Approach LOS	F	E	F	F

Intersection Summary			
Delay	246.1		
HCM Level of Service	F		
Intersection Capacity Utilization	116.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	70	10	10	105	90	5	20	15	125	45	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	78	11	11	117	100	6	22	17	139	50	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	94	228	44	200
Volume Left (vph)	6	11	6	139
Volume Right (vph)	11	100	17	11
Hadj (s)	-0.02	-0.22	-0.17	0.14
Departure Headway (s)	4.8	4.4	4.8	4.9
Degree Utilization, x	0.13	0.28	0.06	0.27
Capacity (veh/h)	699	767	687	695
Control Delay (s)	8.5	9.1	8.1	9.6
Approach Delay (s)	8.5	9.1	8.1	9.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay			9.1	
HCM Level of Service			A	
Intersection Capacity Utilization		37.5%	ICU Level of Service	A
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	20	25	5	30	15	720	45	50	1065	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	22	28	6	33	17	800	50	56	1183	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2194	2183	1189	2183	2164	825	1194			850		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2194	2183	1189	2183	2164	825	1194			850		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	55	87	90	0	87	91	97			93		
cM capacity (veh/h)	25	41	229	25	43	372	584			788		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	39	67	867	1250
Volume Left	11	28	17	56
Volume Right	22	33	50	11
cSH	57	50	584	788
Volume to Capacity	0.68	1.34	0.03	0.07
Queue Length 95th (ft)	71	154	2	6
Control Delay (s)	153.3	376.5	0.9	2.7
Lane LOS	F	F	A	A
Approach Delay (s)	153.3	376.5	0.9	2.7
Approach LOS	F	F		

Intersection Summary			
Average Delay	15.8		
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	45	40	705	30	60	1065
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	44	783	33	67	1183
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	2117	800			817	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2268	773			792	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	87			91	
cM capacity (veh/h)	36	351			730	

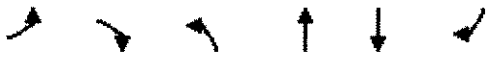
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	817	1250
Volume Left	50	0	67
Volume Right	44	33	0
cSH	62	1700	730
Volume to Capacity	1.53	0.48	0.09
Queue Length 95th (ft)	208	0	8
Control Delay (s)	414.2	0.0	3.5
Lane LOS	F		A
Approach Delay (s)	414.2	0.0	3.5
Approach LOS	F		

Intersection Summary			
Average Delay	20.1		
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	30	50	305	20	45	480
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	56	339	22	50	533
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.78					
vC, conflicting volume	983	350			361	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	979	350			361	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	92			96	
cM capacity (veh/h)	209	693			1198	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	89	361	583
Volume Left	33	0	50
Volume Right	56	22	0
cSH	370	1700	1198
Volume to Capacity	0.24	0.21	0.04
Queue Length 95th (ft)	23	0	3
Control Delay (s)	17.8	0.0	1.2
Lane LOS	C		A
Approach Delay (s)	17.8	0.0	1.2
Approach LOS	C		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	50	15	10	250	465	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	17	11	278	517	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.81	0.81	0.81			
vC, conflicting volume	839	539	561			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	800	428	456			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	97	99			
cM capacity (veh/h)	282	505	891			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	72	289	561
Volume Left	56	11	0
Volume Right	17	0	44
cSH	314	891	1700
Volume to Capacity	0.23	0.01	0.33
Queue Length 95th (ft)	22	1	0
Control Delay (s)	19.9	0.5	0.0
Lane LOS	C	A	
Approach Delay (s)	19.9	0.5	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

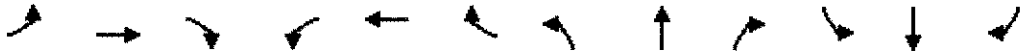
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			1.00			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1840		1770	1784			1961			1761	
Flt Permitted	0.25	1.00		0.33	1.00			0.90			0.94	
Satd. Flow (perm)	457	1840		619	1784			1780			1668	
Volume (vph)	60	390	35	60	465	30	50	235	10	35	245	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	433	39	67	517	33	56	261	11	39	272	44
RTOR Reduction (vph)	0	4	0	0	3	0	0	1	0	0	5	0
Lane Group Flow (vph)	67	468	0	67	547	0	0	327	0	0	350	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	20.9	20.9		20.9	20.9			17.5			17.5	
Effective Green, g (s)	21.9	21.9		21.9	21.9			18.5			18.5	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.35			0.35	
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)	188	757		255	734			619			580	
v/s Ratio Prot		0.25			c0.31							
v/s Ratio Perm	0.15			0.11				0.18			c0.21	
v/c Ratio	0.36	0.62		0.26	0.75			0.53			0.60	
Uniform Delay, d1	10.8	12.3		10.3	13.3			13.9			14.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	1.5		0.6	4.1			0.8			1.8	
Delay (s)	12.0	13.9		10.9	17.4			14.7			16.1	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		13.6			16.7			14.7			16.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.3%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1881		1652	1780				
Flt Permitted	0.25	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	498	1739			1881		1652	1780				
Volume (vph)	40	470	0	0	505	40	65	305	25	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	522	0	0	561	44	72	339	28	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	3	0	0	0	0
Lane Group Flow (vph)	44	522	0	0	601	0	72	364	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	21.5	21.5			21.5		15.4	15.4				
Effective Green, g (s)	22.5	22.5			22.5		16.4	16.4				
Actuated g/C Ratio	0.46	0.46			0.46		0.33	0.33				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	227	794			858		550	592				
v/s Ratio Prot		0.30			c0.32			c0.20				
v/s Ratio Perm	0.09						0.04					
v/c Ratio	0.19	0.66			0.70		0.13	0.62				
Uniform Delay, d1	8.0	10.4			10.7		11.5	13.8				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.4	2.0			2.6		0.1	1.9				
Delay (s)	8.4	12.4			13.3		11.6	15.7				
Level of Service	A	B			B		B	B				
Approach Delay (s)		12.1			13.3			15.0			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

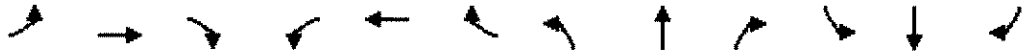


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1648		1711	1801	1531		1616		1652	1739	1583
Flt Permitted	0.41	1.00		0.46	1.00	1.00		0.37		0.72	1.00	1.00
Satd. Flow (perm)	671	1648		833	1801	1531		605		1246	1739	1583
Volume (vph)	115	275	35	70	350	160	5	70	25	225	315	85
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	306	39	78	389	178	6	78	28	250	350	94
RTOR Reduction (vph)	0	5	0	0	0	106	0	12	0	0	0	61
Lane Group Flow (vph)	128	340	0	78	389	72	0	100	0	250	350	33
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	21.3	21.3		21.0	21.0	21.0		5.5		18.1	18.1	18.1
Effective Green, g (s)	22.3	22.3		22.0	22.0	22.0		6.5		19.1	19.1	19.1
Actuated g/C Ratio	0.41	0.41		0.40	0.40	0.40		0.12		0.35	0.35	0.35
Clearance Time (s)	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
Lane Grp Cap (vph)	275	676		337	728	619		72		502	611	556
v/s Ratio Prot		0.21			c0.22					0.08	c0.20	
v/s Ratio Perm	0.19			0.09		0.05		c0.16		0.10		0.02
v/c Ratio	0.47	0.50		0.23	0.53	0.12		1.38		0.50	0.57	0.06
Uniform Delay, d1	11.7	11.9		10.6	12.3	10.1		23.9		15.5	14.3	11.7
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.6		0.4	0.8	0.1		238.3		0.8	1.3	0.0
Delay (s)	13.0	12.5		11.0	13.1	10.2		262.3		16.3	15.6	11.7
Level of Service	B	B		B	B	B		F		B	B	B
Approach Delay (s)		12.6			12.0			262.3			15.3	
Approach LOS		B			B			F			B	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1734	1478	1486	1525			1821	1794	1593	1841	
Flt Permitted		0.97	1.00	0.50	1.00			0.81	1.00	0.64	1.00	
Satd. Flow (perm)		1687	1478	786	1525			1504	1794	1076	1841	
Volume (vph)	15	280	85	55	315	65	75	90	60	105	115	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	311	94	61	350	72	83	100	67	117	128	11
RTOR Reduction (vph)	0	0	38	0	9	0	0	0	37	0	3	0
Lane Group Flow (vph)	0	328	56	61	413	0	0	183	30	117	136	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		17.3	17.3	17.3	17.3			12.7	12.7	12.7	12.7	
Effective Green, g (s)		18.3	18.3	18.3	18.3			13.7	13.7	13.7	13.7	
Actuated g/C Ratio		0.41	0.41	0.41	0.41			0.30	0.30	0.30	0.30	
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)		686	601	320	620			458	546	328	560	
v/s Ratio Prot					c0.27						0.07	
v/s Ratio Perm		0.19	0.04	0.08				c0.12	0.02	0.11		
v/c Ratio		0.48	0.09	0.19	0.67			0.40	0.06	0.36	0.24	
Uniform Delay, d1		9.8	8.2	8.6	10.9			12.4	11.1	12.2	11.8	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.1	0.3	2.7			0.6	0.0	0.7	0.2	
Delay (s)		10.4	8.3	8.9	13.6			13.0	11.1	12.9	12.0	
Level of Service		B	A	A	B			B	B	B	B	
Approach Delay (s)		9.9			13.0			12.5			12.4	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

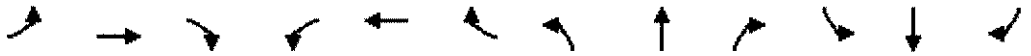


Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			1.00			0.99	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1808			1926			1851			2094	
Flt Permitted		0.94			0.89			0.98			0.99	
Satd. Flow (perm)		1715			1750			1815			2082	
Volume (vph)	15	45	10	20	30	5	15	305	10	5	275	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	11	22	33	6	17	339	11	6	306	17
RTOR Reduction (vph)	0	7	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	71	0	0	61	0	0	366	0	0	327	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		343			350			703			807	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			c0.20			0.16	
v/c Ratio		0.21			0.17			0.52			0.40	
Uniform Delay, d1		26.7			26.5			18.8			17.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.1			2.7			1.5	
Delay (s)		28.1			27.6			21.5			19.3	
Level of Service		C			C			C			B	
Approach Delay (s)		28.1			27.6			21.5			19.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

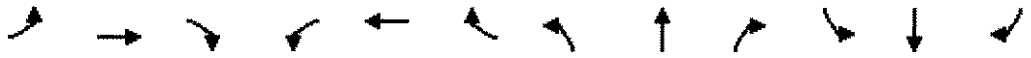
Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.95		
Satd. Flow (prot)	1888	1885		
Flt Permitted	0.95	0.95		
Satd. Flow (perm)	1888	1885		
Volume (vph)	15	375	10	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	417	11	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	433	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	495		
v/s Ratio Prot	0.01	c0.23		
v/s Ratio Perm				
v/c Ratio	0.03	0.88		
Uniform Delay, d1	22.0	28.2		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	19.1		
Delay (s)	22.1	47.3		
Level of Service	C	D		
Approach Delay (s)		46.3		
Approach LOS		D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1583		1808	1583	1770	3534		1770	3500	
Flt Permitted		0.75	1.00		0.78	1.00	0.18	1.00		0.23	1.00	
Satd. Flow (perm)		1393	1583		1462	1583	332	3534		428	3500	
Volume (vph)	55	20	150	30	20	35	130	1090	10	30	885	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	22	167	33	22	39	144	1211	11	33	983	78
RTOR Reduction (vph)	0	0	144	0	0	34	0	1	0	0	7	0
Lane Group Flow (vph)	0	83	23	0	55	5	144	1221	0	33	1054	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		8.2	8.2		8.2	8.2	42.6	42.6		31.8	31.8	
Effective Green, g (s)		8.2	8.2		8.2	8.2	42.6	42.6		31.8	31.8	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.72	0.72		0.54	0.54	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		194	221		204	221	407	2560		231	1893	
v/s Ratio Prot							0.04	c0.35			c0.30	
v/s Ratio Perm		c0.06	0.01		0.04	0.00	0.22			0.08		
v/c Ratio		0.43	0.11		0.27	0.02	0.35	0.48		0.14	0.56	
Uniform Delay, d1		23.2	22.1		22.6	21.8	4.2	3.4		6.7	8.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5	0.2		0.7	0.0	0.5	0.1		0.3	0.4	
Delay (s)		24.7	22.3		23.3	21.9	4.7	3.6		7.0	9.2	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		23.1			22.7			3.7			9.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1478	1770	1934		1652	3297		1652	3295	
Flt Permitted		0.79	1.00	0.71	1.00		0.21	1.00		0.95	1.00	
Satd. Flow (perm)		1426	1478	1329	1934		370	3297		1652	3295	
Volume (vph)	35	25	155	30	20	25	175	1295	15	40	935	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	28	172	33	22	28	194	1439	17	44	1039	17
RTOR Reduction (vph)	0	0	155	0	25	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	67	17	33	25	0	194	1455	0	44	1055	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		6.7	6.7	6.7	6.7		42.0	42.0		3.5	28.5	
Effective Green, g (s)		6.7	6.7	6.7	6.7		43.0	43.0		3.5	29.5	
Actuated g/C Ratio		0.10	0.10	0.10	0.10		0.64	0.64		0.05	0.44	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		141	146	132	191		557	2094		85	1436	
v/s Ratio Prot					0.01		0.09	c0.44		0.03	c0.32	
v/s Ratio Perm		c0.05	0.01	0.02			0.13					
v/c Ratio		0.48	0.12	0.25	0.13		0.35	0.69		0.52	0.73	
Uniform Delay, d1		28.8	27.8	28.2	27.8		11.5	8.1		31.3	15.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.1	0.4	0.1		1.7	1.9		2.2	3.4	
Delay (s)		29.8	27.9	28.5	28.0		13.2	10.0		33.5	19.2	
Level of Service		C	C	C	C		B	A		C	B	
Approach Delay (s)		28.4			28.2			10.4			19.8	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM Average Control Delay	15.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	59.5%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1699			3539			3537	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1699			3539			3537	
Volume (vph)	0	0	0	1455	135	0	0	795	0	0	1430	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1617	150	0	0	883	0	0	1589	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	860	907	0	0	883	0	0	1594	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			30.0			30.0	
Effective Green, g (s)				30.0	30.0			32.0			32.0	
Actuated g/C Ratio				0.43	0.43			0.46			0.46	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				720	728			1618			1617	
v/s Ratio Prot								0.25			c0.45	
v/s Ratio Perm				0.51	0.53							
v/c Ratio				1.19	1.25			0.55			0.99	
Uniform Delay, d1				20.0	20.0			13.7			18.8	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				100.8	122.0			0.4			19.0	
Delay (s)				120.8	142.0			14.1			37.7	
Level of Service				F	F			B			D	
Approach Delay (s)		0.0			131.7			14.1			37.7	
Approach LOS		A			F			B			D	

Intersection Summary			
HCM Average Control Delay	71.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.2%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	150	70	60	100	20	130	215	50	55	295	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	167	78	67	111	22	144	239	56	61	328	28

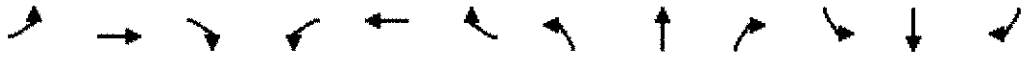
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	267	200	439	417
Volume Left (vph)	22	67	144	61
Volume Right (vph)	78	22	56	28
Hadj (s)	-0.12	0.03	0.02	0.02
Departure Headway (s)	7.4	7.8	6.8	6.9
Degree Utilization, x	0.55	0.43	0.83	0.80
Capacity (veh/h)	432	395	505	499
Control Delay (s)	19.1	16.7	35.4	31.8
Approach Delay (s)	19.1	16.7	35.4	31.8
Approach LOS	C	C	E	D

Intersection Summary				
Delay			28.1	
HCM Level of Service			D	
Intersection Capacity Utilization		73.5%	ICU Level of Service	D
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	150	5	415	275	5	675
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	167	6	461	306	6	750
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.91					
vC, conflicting volume	1375	614			767	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1412	614			767	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	99			99	
cM capacity (veh/h)	137	492			847	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	172	767	756
Volume Left	167	0	6
Volume Right	6	306	0
cSH	141	1700	847
Volume to Capacity	1.22	0.45	0.01
Queue Length 95th (ft)	256	0	0
Control Delay (s)	209.7	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	209.7	0.0	0.2
Approach LOS	F		

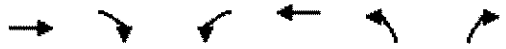
Intersection Summary			
Average Delay	21.4		
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	40	0	50	10	0	10	45	1105	5	5	950	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	44	0	56	11	0	11	50	1228	6	6	1056	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1811	2419	547	1925	2436	617	1094			1233		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1811	2419	547	1925	2436	617	1094			1233		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	88	67	100	97	92			99		
cM capacity (veh/h)	45	29	481	33	28	433	633			561		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	100	22	664	619	533	567
Volume Left	44	11	50	0	6	0
Volume Right	56	11	0	6	0	39
cSH	90	62	633	1700	561	1700
Volume to Capacity	1.11	0.36	0.08	0.36	0.01	0.33
Queue Length 95th (ft)	169	33	6	0	1	0
Control Delay (s)	213.4	93.1	2.1	0.0	0.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	213.4	93.1	1.1		0.1	
Approach LOS	F	F				

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	155	25	40	170	35	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	172	28	44	189	39	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			200		464	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200		464	186
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	91
cM capacity (veh/h)			1372		538	856

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	200	233	117
Volume Left	0	44	39
Volume Right	28	0	78
cSH	1700	1372	715
Volume to Capacity	0.12	0.03	0.16
Queue Length 95th (ft)	0	3	15
Control Delay (s)	0.0	1.7	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	11.0
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 RSG C1 & C2 Only*
Analysis Time Period	*PM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *LOCUST/LEDGE*	North/South Street: *ROUTE 7*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*710*	*300*	*40*	*770*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*788*	*333*	*44*	*855*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*60*	*0*	*30*	*75*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*66*	*0*	*33*	*83*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*44*			*66*			*116*
C (m) (vph)		*619*			*472*			*115*
v/c		*0.07*			*0.14*			*1.01*
95% queue length		*0.23*			*0.48*			*6.66*
Control Delay		*11.3*			*13.9*			*157.5*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*13.9*			*157.5*		
Approach LOS	--	--	*B*			*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 RSG C1 & C2 Only*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*70*	*640*	*0*	*0*	*825*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*77*	*711*	*0*	*0*	*916*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

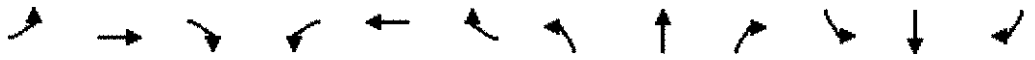
Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*165*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*183*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*77*				*183*			
C (m) (vph)	*745*				*67*			
v/c	*0.10*				*2.73*			
95% queue length	*0.34*				*18.26*			
Control Delay	*10.4*				*915.0*			
LOS	*B*				*F*			
Approach Delay	--	--	*915.0*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 1 (FOUR-LANE)

2008 AM PEAK HOUR



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1823	1583		1817	1583	1770	3517		1770	3531	
Flt Permitted		0.85	1.00		0.82	1.00	0.27	1.00		0.95	1.00	
Satd. Flow (perm)		1586	1583		1531	1583	502	3517		1770	3531	
Volume (vph)	15	20	45	50	50	85	65	570	25	90	940	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	22	50	56	56	94	72	633	28	100	1044	17
RTOR Reduction (vph)	0	0	44	0	0	73	0	0	0	0	0	0
Lane Group Flow (vph)	0	39	6	0	112	21	72	661	0	100	1061	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		13.3	13.3		13.3	25.3	74.0	74.0		12.0	91.0	
Effective Green, g (s)		14.3	14.3		14.3	27.3	75.0	75.0		13.0	92.0	
Actuated g/C Ratio		0.12	0.12		0.12	0.23	0.62	0.62		0.11	0.77	
Clearance Time (s)		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	
Lane Grp Cap (vph)		189	189		182	360	314	2198		192	2707	
v/s Ratio Prot			0.00			0.01		0.19		c0.06	c0.30	
v/s Ratio Perm		0.02			c0.07		0.14					
v/c Ratio		0.21	0.03		0.62	0.06	0.23	0.30		0.52	0.39	
Uniform Delay, d1		47.7	46.7		50.2	36.3	9.8	10.4		50.6	4.7	
Progression Factor		1.00	1.00		1.00	1.00	0.37	0.40		1.00	1.00	
Incremental Delay, d2		0.5	0.1		6.1	0.1	1.6	0.3		2.5	0.4	
Delay (s)		48.3	46.8		56.3	36.4	5.2	4.5		53.1	5.1	
Level of Service		D	D		E	D	A	A		D	A	
Approach Delay (s)		47.4			47.2			4.6			9.2	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.90		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583			1661		1770	3534		1770	3525	
Flt Permitted	0.40	1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	750	1583			1608		1770	3534		1770	3525	
Volume (vph)	20	0	10	20	15	110	10	530	5	105	905	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	0	11	22	17	122	11	589	6	117	1006	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	11	0	0	161	0	11	595	0	117	1034	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	16.8	16.8			16.8		1.6	68.9		13.1	80.4	
Effective Green, g (s)	17.8	17.8			17.8		2.6	69.9		14.1	81.4	
Actuated g/C Ratio	0.15	0.15			0.15		0.02	0.58		0.12	0.68	
Clearance Time (s)	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	
Lane Grp Cap (vph)	111	235			239		38	2059		208	2391	
v/s Ratio Prot		0.01					0.01	0.17		c0.07	c0.29	
v/s Ratio Perm	0.03				c0.10							
v/c Ratio	0.20	0.05			0.67		0.29	0.29		0.56	0.43	
Uniform Delay, d1	44.8	43.8			48.4		57.8	12.6		50.0	8.8	
Progression Factor	1.00	1.00			1.00		1.16	0.31		1.19	0.77	
Incremental Delay, d2	0.9	0.1			7.3		4.1	0.3		3.3	0.5	
Delay (s)	45.7	43.9			55.6		70.9	4.2		62.6	7.3	
Level of Service	D	D			E		E	A		E	A	
Approach Delay (s)		45.1			55.6			5.4			12.9	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	57.8%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.97		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1725			1711		1711	3390		1711	3391	
Flt Permitted		0.66			0.81		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1184			1416		1711	3390		1711	3391	
Volume (vph)	55	20	5	65	40	25	5	465	30	80	805	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	22	6	72	44	28	6	517	33	89	894	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	89	0	0	144	0	6	550	0	89	950	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		16.8			16.8		1.6	72.1		9.9	80.4	
Effective Green, g (s)		17.8			17.8		2.6	73.1		10.9	81.4	
Actuated g/C Ratio		0.15			0.15		0.02	0.61		0.09	0.68	
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)		176			210		37	2065		155	2300	
v/s Ratio Prot							0.00	0.16		c0.05	c0.28	
v/s Ratio Perm		0.08			c0.10							
v/c Ratio		0.51			0.69		0.16	0.27		0.57	0.41	
Uniform Delay, d1		47.0			48.4		57.6	10.9		52.3	8.6	
Progression Factor		1.00			1.00		0.94	1.00		1.21	0.10	
Incremental Delay, d2		2.3			8.9		1.9	0.3		4.7	0.5	
Delay (s)		49.3			57.4		56.0	11.3		68.2	1.4	
Level of Service		D			E		E	B		E	A	
Approach Delay (s)		49.3			57.4			11.7			7.1	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

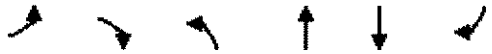
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		1.00			1.00	0.85		1.00	0.85		0.98	
Flt Protected		0.99			1.00	1.00		0.99	1.00		0.99	
Satd. Flow (prot)		1837			1859	1583		1842	1583		1797	
Flt Permitted		0.89			0.99	1.00		0.90	1.00		0.89	
Satd. Flow (perm)		1649			1838	1583		1679	1583		1610	
Volume (vph)	45	160	5	10	255	45	40	140	10	45	130	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	178	6	11	283	50	44	156	11	50	144	44
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	8	0	0	0
Lane Group Flow (vph)	0	234	0	0	294	21	0	200	3	0	238	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		16.3			16.3	16.3		9.4	9.4		9.4	
Effective Green, g (s)		17.3			17.3	17.3		10.4	10.4		10.4	
Actuated g/C Ratio		0.43			0.43	0.43		0.26	0.26		0.26	
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)		704			785	676		431	406		413	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.16	0.01		0.12	0.00		c0.15	
v/c Ratio		0.33			0.37	0.03		0.46	0.01		0.58	
Uniform Delay, d1		7.7			7.9	6.7		12.7	11.2		13.1	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.3			0.3	0.0		0.8	0.0		1.9	
Delay (s)		8.0			8.2	6.8		13.5	11.2		15.1	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		8.0			8.0			13.4			15.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.95		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3369		1770	3539	1769	
Flt Permitted	1.00		0.29	1.00	0.95	
Satd. Flow (perm)	3369		548	3539	1769	
Volume (vph)	520	245	25	870	270	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	578	272	28	967	300	11
RTOR Reduction (vph)	26	0	0	0	2	0
Lane Group Flow (vph)	824	0	28	967	309	0
Turn Type	Prot		Perm			
Protected Phases	2			6	8	
Permitted Phases			6			
Actuated Green, G (s)	79.0		79.0	79.0	24.8	
Effective Green, g (s)	80.0		80.0	80.0	25.8	
Actuated g/C Ratio	0.67		0.67	0.67	0.22	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2246		365	2359	380	
v/s Ratio Prot	0.24			c0.27	c0.17	
v/s Ratio Perm			0.05			
v/c Ratio	0.37		0.08	0.41	0.81	
Uniform Delay, d1	8.8		7.0	9.2	44.8	
Progression Factor	1.00		0.99	1.08	1.00	
Incremental Delay, d2	0.5		0.4	0.5	12.6	
Delay (s)	9.3		7.3	10.4	57.4	
Level of Service	A		A	B	E	
Approach Delay (s)	9.3			10.4	57.4	
Approach LOS	A			B	E	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	1.00	1.00	0.88
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3305		1711	1863	1801	2787
Flt Permitted	0.96		0.41	1.00	1.00	1.00
Satd. Flow (perm)	3305		738	1863	1801	2787
Volume (vph)	295	20	15	465	370	785
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	328	22	17	517	411	872
RTOR Reduction (vph)	4	0	0	0	0	0
Lane Group Flow (vph)	346	0	17	517	411	872
Turn Type			Perm			Perm
Protected Phases	2			4	8	
Permitted Phases			4			8
Actuated Green, G (s)	38.8		55.0	55.0	55.0	55.0
Effective Green, g (s)	39.8		56.0	56.0	56.0	56.0
Actuated g/C Ratio	0.36		0.51	0.51	0.51	0.51
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1196		376	948	917	1419
v/s Ratio Prot	c0.10			0.28	0.23	
v/s Ratio Perm			0.02			c0.31
v/c Ratio	0.29		0.05	0.55	0.45	0.61
Uniform Delay, d1	25.0		13.6	18.3	17.2	19.3
Progression Factor	0.84		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6		0.2	2.3	0.4	0.8
Delay (s)	21.6		13.8	20.6	17.5	20.1
Level of Service	C		B	C	B	C
Approach Delay (s)	21.6			20.4	19.3	
Approach LOS	C			C	B	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

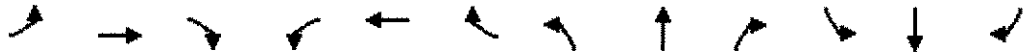
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		1.00			0.91			0.99		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1948			1806			1973		1711	1759	
Flt Permitted		0.81			0.98			0.99		0.48	1.00	
Satd. Flow (perm)		1600			1779			1953		856	1759	
Volume (vph)	30	45	0	10	55	125	10	240	10	115	165	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	50	0	11	61	139	11	267	11	128	183	33
RTOR Reduction (vph)	0	0	0	0	103	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	83	0	0	108	0	0	287	0	128	210	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.0			10.0			21.8		31.8	31.8	
Effective Green, g (s)		11.0			11.0			22.8		32.8	32.8	
Actuated g/C Ratio		0.20			0.20			0.42		0.60	0.60	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		322			358			816		608	1057	
v/s Ratio Prot										0.02	c0.12	
v/s Ratio Perm		0.05			c0.06			c0.15		0.10		
v/c Ratio		0.26			0.30			0.35		0.21	0.20	
Uniform Delay, d1		18.4			18.5			10.9		5.5	4.9	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.4			0.5			0.3		0.2	0.1	
Delay (s)		18.8			19.0			11.1		5.6	5.0	
Level of Service		B			B			B		A	A	
Approach Delay (s)		18.8			19.0			11.1			5.3	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.96	0.95	1.00
Satd. Flow (prot)	1863	1583	1681	1706	1770	2787
Flt Permitted	1.00	1.00	0.95	0.55	0.95	1.00
Satd. Flow (perm)	1863	1583	1681	966	1770	2787
Volume (vph)	65	90	695	105	220	250
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	100	772	117	244	278
RTOR Reduction (vph)	0	52	0	0	0	66
Lane Group Flow (vph)	72	48	433	456	244	212
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	10.9	50.7	38.1	54.0	39.8	82.9
Effective Green, g (s)	11.9	52.7	39.1	55.0	40.8	83.9
Actuated g/C Ratio	0.11	0.48	0.36	0.50	0.37	0.76
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	202	758	598	746	657	2126
v/s Ratio Prot	0.04	0.02	c0.26	0.22	c0.14	0.08
v/s Ratio Perm		0.01		c0.09		
v/c Ratio	0.36	0.06	0.72	0.61	0.37	0.10
Uniform Delay, d1	45.5	15.4	30.8	19.8	25.2	3.4
Progression Factor	1.00	1.00	0.41	0.41	1.02	7.38
Incremental Delay, d2	1.1	0.0	3.5	1.2	1.6	0.0
Delay (s)	46.6	15.4	16.1	9.4	27.3	24.8
Level of Service	D	B	B	A	C	C
Approach Delay (s)	28.5			12.7	26.0	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.89			0.98		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1648			1803		1770	3468		1770	3532	
Flt Permitted		0.95			0.91		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1577			1660		1770	3468		1770	3532	
Volume (vph)	5	0	20	30	65	15	80	450	70	5	770	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	22	33	72	17	89	500	78	6	856	11
RTOR Reduction (vph)	0	19	0	0	6	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	116	0	89	572	0	6	867	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		12.5			12.5		9.5	74.7		1.6	66.8	
Effective Green, g (s)		13.5			13.5		10.5	75.7		2.6	67.8	
Actuated g/C Ratio		0.12			0.12		0.10	0.69		0.02	0.62	
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)		194			204		169	2387		42	2177	
v/s Ratio Prot							c0.05	0.17		0.00	c0.25	
v/s Ratio Perm		0.01			c0.07							
v/c Ratio		0.04			0.57		0.53	0.24		0.14	0.40	
Uniform Delay, d1		42.6			45.5		47.4	6.4		52.6	10.7	
Progression Factor		1.00			0.87		0.87	1.30		1.22	0.15	
Incremental Delay, d2		0.1			3.6		2.9	0.2		1.2	0.4	
Delay (s)		42.7			43.0		44.0	8.6		65.5	2.0	
Level of Service		D			D		D	A		E	A	
Approach Delay (s)		42.7			43.0			13.3			2.4	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.97			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780			1808		1770	3534		1770	3510	
Flt Permitted		0.81			0.92		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1460			1675		1770	3534		1770	3510	
Volume (vph)	45	65	30	15	65	15	65	540	5	5	770	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	72	33	17	72	17	72	600	6	6	856	50
RTOR Reduction (vph)	0	9	0	0	7	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	146	0	0	99	0	72	606	0	6	904	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		14.9			14.9		8.2	72.3		1.6	65.7	
Effective Green, g (s)		15.9			15.9		9.2	73.3		2.6	66.7	
Actuated g/C Ratio		0.14			0.14		0.08	0.67		0.02	0.61	
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)		211			242		148	2355		42	2128	
v/s Ratio Prot							c0.04	0.17		0.00	c0.26	
v/s Ratio Perm		c0.10			0.06							
v/c Ratio		0.69			0.41		0.49	0.26		0.14	0.42	
Uniform Delay, d1		44.7			42.8		48.1	7.4		52.6	11.5	
Progression Factor		1.00			1.00		0.83	1.28		1.27	0.36	
Incremental Delay, d2		9.3			1.1		2.4	0.3		1.5	0.6	
Delay (s)		54.0			43.9		42.4	9.7		68.2	4.7	
Level of Service		D			D		D	A		E	A	
Approach Delay (s)		54.0			43.9			13.2			5.2	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

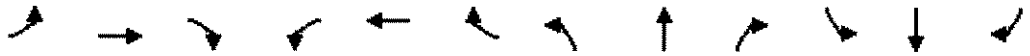
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1827	1583		1766		1770	3504		1770	3513	
Flt Permitted		0.87	1.00		0.56		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1624	1583		1024		1770	3504		1770	3513	
Volume (vph)	50	80	105	40	5	5	135	555	40	5	770	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	89	117	44	6	6	150	617	44	6	856	44
RTOR Reduction (vph)	0	0	101	0	4	0	0	3	0	0	2	0
Lane Group Flow (vph)	0	145	16	0	52	0	150	658	0	6	898	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		14.3	14.3		14.3		13.8	72.9		1.6	60.7	
Effective Green, g (s)		15.3	15.3		15.3		14.8	73.9		2.6	61.7	
Actuated g/C Ratio		0.14	0.14		0.14		0.13	0.67		0.02	0.56	
Clearance Time (s)		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	
Lane Grp Cap (vph)		226	220		142		238	2354		42	1970	
v/s Ratio Prot							c0.08	0.19		0.00	c0.26	
v/s Ratio Perm		c0.09	0.01		0.05							
v/c Ratio		0.64	0.07		0.36		0.63	0.28		0.14	0.46	
Uniform Delay, d1		44.8	41.2		42.9		45.0	7.3		52.6	14.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.38	0.17	
Incremental Delay, d2		6.1	0.1		1.6		5.3	0.3		1.4	0.7	
Delay (s)		50.9	41.3		44.5		50.4	7.6		74.0	3.2	
Level of Service		D	D		D		D	A		E	A	
Approach Delay (s)		46.6			44.5			15.5			3.6	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	49.5%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	100	50	25	100	25	10	165	35	5	135	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	111	56	28	111	28	11	183	39	6	150	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	172	167	233	161
Volume Left (vph)	6	28	11	6
Volume Right (vph)	56	28	39	6
Hadj (s)	-0.15	-0.03	-0.06	0.02
Departure Headway (s)	5.0	5.1	5.0	5.1
Degree Utilization, x	0.24	0.24	0.32	0.23
Capacity (veh/h)	653	638	667	641
Control Delay (s)	9.6	9.7	10.3	9.7
Approach Delay (s)	9.6	9.7	10.3	9.7
Approach LOS	A	A	B	A

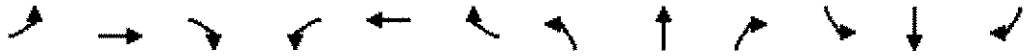
Intersection Summary			
Delay	9.9		
HCM Level of Service	A		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	40	45	55	125	5	55	200	40	10	195	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	44	50	61	139	6	61	222	44	11	217	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	100	206	328	233
Volume Left (vph)	6	61	61	11
Volume Right (vph)	50	6	44	6
Hadj (s)	-0.25	0.08	-0.01	0.03
Departure Headway (s)	5.5	5.6	5.1	5.3
Degree Utilization, x	0.15	0.32	0.47	0.34
Capacity (veh/h)	564	581	656	630
Control Delay (s)	9.5	11.3	12.6	11.1
Approach Delay (s)	9.5	11.3	12.6	11.1
Approach LOS	A	B	B	B

Intersection Summary			
Delay	11.5		
HCM Level of Service	B		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	110	0	10	15	110	5	55	10	140	20	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	122	0	11	17	122	6	61	11	156	22	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	150	78	194
Volume Left (vph)	22	11	6	156
Volume Right (vph)	0	122	11	17
Hadj (s)	0.06	-0.44	-0.04	0.14
Departure Headway (s)	4.8	4.3	4.8	4.8
Degree Utilization, x	0.19	0.18	0.10	0.26
Capacity (veh/h)	694	769	689	697
Control Delay (s)	9.0	8.3	8.4	9.6
Approach Delay (s)	9.0	8.3	8.4	9.6
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.9		
HCM Level of Service	A		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	15	45	5	40	20	785	30	30	1155	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	17	50	6	44	22	872	33	33	1283	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1247	
pX, platoon unblocked												
vC, conflicting volume	1881	2303	644	1661	2289	453	1289			906		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1881	2303	644	1661	2289	453	1289			906		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	84	96	1	84	92	96			96		
cM capacity (veh/h)	33	35	415	50	36	554	534			747		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	28	100	458	469	675	647
Volume Left	6	50	22	0	33	0
Volume Right	17	44	0	33	0	6
cSH	75	81	534	1700	747	1700
Volume to Capacity	0.37	1.23	0.04	0.28	0.04	0.38
Queue Length 95th (ft)	35	185	3	0	3	0
Control Delay (s)	78.2	265.7	1.2	0.0	1.2	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	78.2	265.7	0.6		0.6	
Approach LOS	F	F				

Intersection Summary			
Average Delay	12.7		
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	45	80	740	20	75	1110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	89	822	22	83	1233
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked						
vC, conflicting volume	1617	422			844	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1617	422			844	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	41	85			89	
cM capacity (veh/h)	84	580			788	

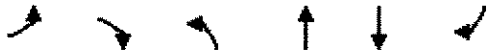
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	139	548	296	494	822
Volume Left	50	0	0	83	0
Volume Right	89	0	22	0	0
cSH	186	1700	1700	788	1700
Volume to Capacity	0.75	0.32	0.17	0.11	0.48
Queue Length 95th (ft)	121	0	0	9	0
Control Delay (s)	66.0	0.0	0.0	2.9	0.0
Lane LOS	F			A	
Approach Delay (s)	66.0	0.0		1.1	
Approach LOS	F				

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	35	70	430	20	50	320
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	78	478	22	56	356
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.86					
vC, conflicting volume	956	489			500	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	949	489			500	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	87			95	
cM capacity (veh/h)	237	579			1064	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	117	500	411
Volume Left	39	0	56
Volume Right	78	22	0
cSH	391	1700	1064
Volume to Capacity	0.30	0.29	0.05
Queue Length 95th (ft)	31	0	4
Control Delay (s)	18.1	0.0	1.6
Lane LOS	C		A
Approach Delay (s)	18.1	0.0	1.6
Approach LOS	C		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	70	5	65	390	310	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	6	72	433	344	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.91	0.91	0.91			
vC, conflicting volume	947	369	394			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	942	310	338			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	99	94			
cM capacity (veh/h)	249	667	1117			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	83	506	394
Volume Left	78	72	0
Volume Right	6	0	50
cSH	260	1117	1700
Volume to Capacity	0.32	0.06	0.23
Queue Length 95th (ft)	33	5	0
Control Delay (s)	25.2	1.8	0.0
Lane LOS	D	A	
Approach Delay (s)	25.2	1.8	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1826		1770	1787			1940			1728	
Flt Permitted	0.28	1.00		0.49	1.00			0.96			0.91	
Satd. Flow (perm)	506	1826		920	1787			1874			1593	
Volume (vph)	40	260	40	30	460	25	20	205	40	45	150	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	289	44	33	511	28	22	228	44	50	167	67
RTOR Reduction (vph)	0	7	0	0	2	0	0	6	0	0	10	0
Lane Group Flow (vph)	44	326	0	33	537	0	0	288	0	0	274	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	19.7	19.7		19.7	19.7			14.8			14.8	
Effective Green, g (s)	20.7	20.7		20.7	20.7			15.8			15.8	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.32			0.32	
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)	213	770		388	753			603			513	
v/s Ratio Prot		0.18			c0.30							
v/s Ratio Perm	0.09			0.04				0.15			c0.17	
v/c Ratio	0.21	0.42		0.09	0.71			0.48			0.53	
Uniform Delay, d1	9.0	10.0		8.5	11.7			13.3			13.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.4		0.1	3.2			0.6			1.1	
Delay (s)	9.5	10.4		8.6	14.9			13.9			14.7	
Level of Service	A	B		A	B			B			B	
Approach Delay (s)		10.3			14.6			13.9			14.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1871		1652	1761				
Flt Permitted	0.33	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	650	1739			1871		1652	1761				
Volume (vph)	15	310	0	0	480	60	100	170	30	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	344	0	0	533	67	111	189	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	6	0	0	0	0
Lane Group Flow (vph)	17	344	0	0	595	0	111	216	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	27.1	27.1			27.1		10.8	10.8				
Effective Green, g (s)	28.1	28.1			28.1		11.8	11.8				
Actuated g/C Ratio	0.56	0.56			0.56		0.23	0.23				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	363	971			1045		388	413				
v/s Ratio Prot		0.20			c0.32			c0.12				
v/s Ratio Perm	0.03						0.07					
v/c Ratio	0.05	0.35			0.57		0.29	0.52				
Uniform Delay, d1	5.0	6.1			7.2		15.8	16.8				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.2			0.7		0.4	1.2				
Delay (s)	5.1	6.3			7.9		16.2	18.0				
Level of Service	A	A			A		B	B				
Approach Delay (s)		6.3			7.9			17.4			0.0	
Approach LOS		A			A			B			A	

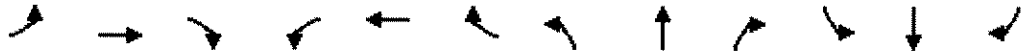
Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1669		1711	1801	1531		1626		1652	1739	1583
Flt Permitted	0.47	1.00		0.62	1.00	1.00		0.91		0.73	1.00	1.00
Satd. Flow (perm)	759	1669		1113	1801	1531		1491		1265	1739	1583
Volume (vph)	30	180	5	40	315	135	10	25	5	75	175	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	200	6	44	350	150	11	28	6	83	194	72
RTOR Reduction (vph)	0	1	0	0	0	81	0	5	0	0	0	49
Lane Group Flow (vph)	33	205	0	44	350	69	0	40	0	83	194	23
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	26.1	26.1		27.3	27.3	27.3		11.0		19.1	19.1	19.1
Effective Green, g (s)	27.1	27.1		28.3	28.3	28.3		12.0		20.1	20.1	20.1
Actuated g/C Ratio	0.44	0.44		0.46	0.46	0.46		0.19		0.33	0.33	0.33
Clearance Time (s)	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
Lane Grp Cap (vph)	333	732		510	825	701		290		437	566	515
v/s Ratio Prot		0.12			c0.19					0.01	c0.11	
v/s Ratio Perm	0.04			0.04		0.04		0.03		0.05		0.01
v/c Ratio	0.10	0.28		0.09	0.42	0.10		0.14		0.19	0.34	0.05
Uniform Delay, d1	10.2	11.1		9.5	11.3	9.5		20.6		15.1	15.8	14.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2		0.1	0.4	0.1		0.2		0.2	0.4	0.0
Delay (s)	10.3	11.3		9.5	11.6	9.6		20.8		15.3	16.2	14.3
Level of Service	B	B		A	B	A		C		B	B	B
Approach Delay (s)		11.2			10.9			20.8			15.6	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1736	1478	1486	1516			1834	1794	1593	1833	
Flt Permitted		0.99	1.00	0.64	1.00			0.89	1.00	0.63	1.00	
Satd. Flow (perm)		1713	1478	1004	1516			1657	1794	1049	1833	
Volume (vph)	5	160	45	20	270	70	60	130	25	20	45	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	178	50	22	300	78	67	144	28	22	50	6
RTOR Reduction (vph)	0	0	31	0	12	0	0	0	13	0	4	0
Lane Group Flow (vph)	0	184	19	22	366	0	0	211	15	22	52	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		15.2	15.2	15.2	15.2			12.0	12.0	12.0	12.0	
Effective Green, g (s)		16.2	16.2	16.2	16.2			13.0	13.0	13.0	13.0	
Actuated g/C Ratio		0.38	0.38	0.38	0.38			0.31	0.31	0.31	0.31	
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)		658	567	385	582			510	553	323	565	
v/s Ratio Prot					c0.24						0.03	
v/s Ratio Perm		0.11	0.01	0.02				c0.13	0.01	0.02		
v/c Ratio		0.28	0.03	0.06	0.63			0.41	0.03	0.07	0.09	
Uniform Delay, d1		9.0	8.1	8.2	10.6			11.6	10.2	10.3	10.4	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.1	2.1			0.5	0.0	0.1	0.1	
Delay (s)		9.2	8.1	8.3	12.7			12.1	10.2	10.4	10.5	
Level of Service		A	A	A	B			B	B	B	B	
Approach Delay (s)		9.0			12.4			11.9			10.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

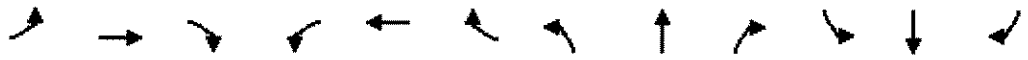


Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.98			1.00			0.99	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1795			1923			1853			2091	
Flt Permitted		0.95			0.96			0.98			0.98	
Satd. Flow (perm)		1728			1865			1824			2059	
Volume (vph)	10	30	10	5	20	5	20	305	5	5	95	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	33	11	6	22	6	22	339	6	6	106	6
RTOR Reduction (vph)	0	9	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	46	0	0	34	0	0	366	0	0	116	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		346			373			707			798	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.20			0.06	
v/c Ratio		0.13			0.09			0.52			0.14	
Uniform Delay, d1		26.3			26.1			18.8			15.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.8			0.5			2.7			0.4	
Delay (s)		27.1			26.6			21.5			16.3	
Level of Service		C			C			C			B	
Approach Delay (s)		27.1			26.6			21.5			16.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.98		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1872		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1872		
Volume (vph)	5	175	15	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	194	17	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	216	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	491		
v/s Ratio Prot	0.00	c0.12		
v/s Ratio Perm				
v/c Ratio	0.01	0.44		
Uniform Delay, d1	21.8	24.6		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	2.8		
Delay (s)	21.9	27.4		
Level of Service	C	C		
Approach Delay (s)		27.3		
Approach LOS		C		

Intersection Summary



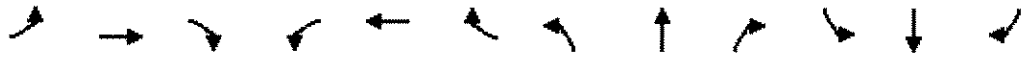
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1823	1583	1770	3536		1770	3499	
Flt Permitted		0.77	1.00		0.87	1.00	0.32	1.00		0.30	1.00	
Satd. Flow (perm)		1439	1583		1623	1583	587	3536		561	3499	
Volume (vph)	60	25	110	15	20	15	100	850	5	10	555	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	28	122	17	22	17	111	944	6	11	617	50
RTOR Reduction (vph)	0	0	99	0	0	14	0	1	0	0	7	0
Lane Group Flow (vph)	0	95	23	0	39	3	111	949	0	11	660	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		10.5	10.5		10.5	10.5	38.3	38.3		28.7	28.7	
Effective Green, g (s)		10.5	10.5		10.5	10.5	38.3	38.3		28.7	28.7	
Actuated g/C Ratio		0.18	0.18		0.18	0.18	0.67	0.67		0.51	0.51	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		266	293		300	293	512	2384		283	1768	
v/s Ratio Prot							0.02	c0.27			0.19	
v/s Ratio Perm		c0.07	0.01		0.02	0.00	0.12			0.02		
v/c Ratio		0.36	0.08		0.13	0.01	0.22	0.40		0.04	0.37	
Uniform Delay, d1		20.2	19.1		19.3	18.9	3.7	4.1		7.1	8.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.1		0.2	0.0	0.2	0.1		0.1	0.1	
Delay (s)		21.0	19.3		19.5	18.9	3.9	4.2		7.1	8.7	
Level of Service		C	B		B	B	A	A		A	A	
Approach Delay (s)		20.0			19.3			4.2			8.7	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3299		1652	3265	
Flt Permitted		0.75	1.00	0.71	1.00		0.35	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		608	3299		1652	3265	
Volume (vph)	50	10	240	15	5	10	90	1020	10	10	600	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	267	17	6	11	100	1133	11	11	667	56
RTOR Reduction (vph)	0	0	237	0	10	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	67	30	17	7	0	100	1143	0	11	716	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		682	2207		21	1365	
v/s Ratio Prot					0.00		0.04	c0.35		0.01	c0.22	
v/s Ratio Perm		c0.05	0.02	0.01			0.06					
v/c Ratio		0.45	0.18	0.11	0.03		0.15	0.52		0.52	0.52	
Uniform Delay, d1		29.1	28.3	28.0	27.8		5.4	5.9		34.4	15.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		0.5	0.9		10.4	1.4	
Delay (s)		29.9	28.4	28.2	27.8		5.8	6.7		44.8	16.7	
Level of Service		C	C	C	C		A	A		D	B	
Approach Delay (s)		28.7			28.0			6.7			17.1	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM Average Control Delay	13.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.48			
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	51.8%	ICU Level of Service	A	
Analysis Period (min)	15			

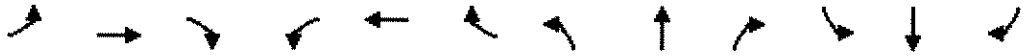
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1255	50	0	0	700	0	0	925	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1394	56	0	0	778	0	0	1028	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	706	744	0	0	778	0	0	1028	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.2	28.2			24.5			24.5	
Effective Green, g (s)				30.2	30.2			26.5			26.5	
Actuated g/C Ratio				0.47	0.47			0.41			0.41	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				785	789			1450			1450	
v/s Ratio Prot								0.22			c0.29	
v/s Ratio Perm				0.42	0.44							
v/c Ratio				0.90	0.94			0.54			0.71	
Uniform Delay, d1				15.9	16.4			14.5			15.9	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				13.1	19.4			0.4			1.6	
Delay (s)				29.0	35.8			14.8			17.5	
Level of Service				C	D			B			B	
Approach Delay (s)		0.0			32.5			14.8			17.5	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.3%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	100	30	45	155	10	25	325	45	5	145	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	111	33	50	172	11	28	361	50	6	161	11

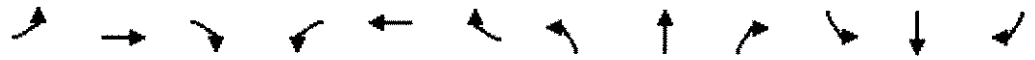
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	150	233	439	178
Volume Left (vph)	6	50	28	6
Volume Right (vph)	33	11	50	11
Hadj (s)	-0.09	0.05	-0.02	0.00
Departure Headway (s)	6.0	6.0	5.4	5.8
Degree Utilization, x	0.25	0.39	0.66	0.29
Capacity (veh/h)	517	543	638	553
Control Delay (s)	11.1	12.7	18.1	11.2
Approach Delay (s)	11.1	12.7	18.1	11.2
Approach LOS	B	B	C	B

Intersection Summary			
Delay	14.6		
HCM Level of Service	B		
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	75	5	385	205	5	340
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	6	428	228	6	378
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked						
vC, conflicting volume	931	542			656	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	931	542			656	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	72	99			99	
cM capacity (veh/h)	295	541			932	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	89	656	383
Volume Left	83	0	6
Volume Right	6	228	0
cSH	303	1700	932
Volume to Capacity	0.29	0.39	0.01
Queue Length 95th (ft)	30	0	0
Control Delay (s)	21.7	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	21.7	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	0	50	10	0	10	50	860	5	5	575	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	0	56	11	0	11	56	956	6	6	639	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1275	1747	344	1456	1769	481	689			961		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1275	1747	344	1456	1769	481	689			961		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	100	91	86	100	98	94			99		
cM capacity (veh/h)	115	79	652	79	77	532	901			712		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	22	533	483	325	369
Volume Left	22	11	56	0	6	0
Volume Right	56	11	0	6	0	50
cSH	279	137	901	1700	712	1700
Volume to Capacity	0.28	0.16	0.06	0.28	0.01	0.22
Queue Length 95th (ft)	28	14	5	0	1	0
Control Delay (s)	22.8	36.2	1.7	0.0	0.3	0.0
Lane LOS	C	E	A		A	
Approach Delay (s)	22.8	36.2	0.9		0.1	
Approach LOS	C	E				

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	57.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	195	30	110	70	10	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	217	33	122	78	11	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			250		556	233
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		556	233
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		98	94
cM capacity (veh/h)			1316		447	806

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	250	200	56
Volume Left	0	122	11
Volume Right	33	0	44
cSH	1700	1316	694
Volume to Capacity	0.15	0.09	0.08
Queue Length 95th (ft)	0	8	7
Control Delay (s)	0.0	5.2	10.6
Lane LOS		A	B
Approach Delay (s)	0.0	5.2	10.6
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD ALT1*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*610*	*265*	*0*	*400*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*677*	*294*	*0*	*444*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*55*	*0*	*25*	*85*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*61*	*0*	*27*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*0*			*61*			*121*
C (m) (vph)		*706*			*527*			*328*
v/c		*0.00*			*0.12*			*0.37*
95% queue length		*0.00*			*0.39*			*1.65*
Control Delay		*10.1*			*12.7*			*22.3*
LOS		*B*			*B*			*C*
Approach Delay	--	--	*12.7*			*22.3*		
Approach LOS	--	--	*B*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD ALT1*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*60*	*550*	*0*	*0*	*415*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*66*	*611*	*0*	*0*	*461*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

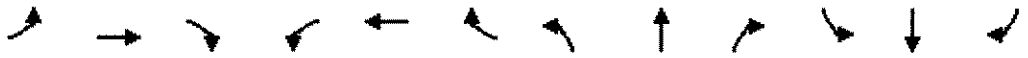
Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*145*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*161*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*66*				*161*			
C (m) (vph)	*1100*				*167*			
v/c	*0.06*				*0.96*			
95% queue length	*0.19*				*7.40*			
Control Delay	*8.5*				*115.5*			
LOS	*A*				*F*			
Approach Delay	--	--	*115.5*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 1 (FOUR-LANE)

2008 PM PEAK HOUR



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1817	1583		1813	1583	1770	3504		1770	3519	
Flt Permitted		0.77	1.00		0.81	1.00	0.32	1.00		0.95	1.00	
Satd. Flow (perm)		1433	1583		1501	1583	603	3504		1770	3519	
Volume (vph)	20	20	65	90	75	120	85	720	50	115	760	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	22	72	100	83	133	94	800	56	128	844	33
RTOR Reduction (vph)	0	0	60	0	0	93	0	0	0	0	0	0
Lane Group Flow (vph)	0	44	12	0	183	40	94	856	0	128	877	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		17.8	17.8		17.8	30.8	58.5	58.5		13.0	76.5	
Effective Green, g (s)		18.8	18.8		18.8	32.8	59.5	59.5		14.0	77.5	
Actuated g/C Ratio		0.17	0.17		0.17	0.30	0.54	0.54		0.13	0.70	
Clearance Time (s)		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	
Lane Grp Cap (vph)		245	271		257	472	326	1895		225	2479	
v/s Ratio Prot			0.01			0.03		c0.24		c0.07	0.25	
v/s Ratio Perm		0.03			c0.12		0.16					
v/c Ratio		0.18	0.05		0.71	0.08	0.29	0.45		0.57	0.35	
Uniform Delay, d1		39.0	38.1		43.0	27.8	13.7	15.3		45.2	6.4	
Progression Factor		1.00	1.00		1.00	1.00	0.45	0.52		1.00	1.00	
Incremental Delay, d2		0.4	0.1		9.0	0.1	2.0	0.7		3.3	0.4	
Delay (s)		39.4	38.2		52.0	27.9	8.3	8.6		48.4	6.8	
Level of Service		D	D		D	C	A	A		D	A	
Approach Delay (s)		38.6			41.9			8.6			12.1	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.88		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1829			1634		1770	3514		1770	3516	
Flt Permitted	0.39	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	721	1829			1623		1770	3514		1770	3516	
Volume (vph)	30	40	5	5	10	135	20	690	35	95	785	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	44	6	6	11	150	22	767	39	106	872	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	33	50	0	0	167	0	22	806	0	106	911	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	16.2	16.2			16.2		3.4	61.0		11.6	69.2	
Effective Green, g (s)	17.2	17.2			17.2		4.4	62.0		12.6	70.2	
Actuated g/C Ratio	0.16	0.16			0.16		0.04	0.56		0.11	0.64	
Clearance Time (s)	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	
Lane Grp Cap (vph)	113	286			254		71	1981		203	2244	
v/s Ratio Prot		0.03					0.01	0.23		c0.06	c0.26	
v/s Ratio Perm	0.05				c0.10							
v/c Ratio	0.29	0.17			0.66		0.31	0.41		0.52	0.41	
Uniform Delay, d1	41.0	40.2			43.6		51.3	13.6		45.9	9.7	
Progression Factor	1.00	1.00			1.00		1.16	0.61		1.22	0.71	
Incremental Delay, d2	1.4	0.3			6.0		2.2	0.6		2.3	0.5	
Delay (s)	42.5	40.5			49.7		61.8	8.9		58.4	7.5	
Level of Service	D	D			D		E	A		E	A	
Approach Delay (s)		41.3			49.7			10.3			12.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

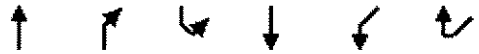
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frt		0.99			0.94			0.99		1.00	0.99	
Flt Protected		0.98			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1739			1658			3378		1711	3388	
Flt Permitted		0.70			0.83			1.00		0.95	1.00	
Satd. Flow (perm)		1239			1393			3378		1711	3388	
Volume (vph)	50	50	10	75	40	100	0	595	55	95	655	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	56	11	83	44	111	0	661	61	106	728	50
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	123	0	0	238	0	0	722	0	106	778	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		22.2			22.2			55.5		11.1	71.6	
Effective Green, g (s)		23.2			23.2			56.5		12.1	72.6	
Actuated g/C Ratio		0.21			0.21			0.51		0.11	0.66	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		261			294			1735		188	2236	
v/s Ratio Prot								c0.21		c0.06	0.23	
v/s Ratio Perm		0.10			c0.17							
v/c Ratio		0.47			0.81			0.42		0.56	0.35	
Uniform Delay, d1		38.0			41.3			16.5		46.4	8.3	
Progression Factor		1.00			1.00			0.26		1.40	0.42	
Incremental Delay, d2		1.3			15.1			0.6		3.6	0.4	
Delay (s)		39.4			56.3			5.0		68.5	3.9	
Level of Service		D			E			A		E	A	
Approach Delay (s)		39.4			56.3			5.0			11.6	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.98			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		1.00	1.00		0.99	
Satd. Flow (prot)		1831			1845	1583		1854	1583		1829	
Flt Permitted		0.98			0.89	1.00		0.96	1.00		0.89	
Satd. Flow (perm)		1802			1650	1583		1780	1583		1644	
Volume (vph)	10	225	30	70	295	35	10	90	70	70	185	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	250	33	78	328	39	11	100	78	78	206	11
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	55	0	0	0
Lane Group Flow (vph)	0	294	0	0	406	17	0	111	23	0	295	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		19.8			19.8	19.8		13.3	13.3		13.3	
Effective Green, g (s)		20.8			20.8	20.8		14.3	14.3		14.3	
Actuated g/C Ratio		0.44			0.44	0.44		0.30	0.30		0.30	
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)		786			719	690		534	475		493	
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.25	0.01		0.06	0.01		c0.18	
v/c Ratio		0.37			0.56	0.02		0.21	0.05		0.60	
Uniform Delay, d1		9.1			10.1	7.7		12.5	11.9		14.2	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.3			1.0	0.0		0.2	0.0		2.0	
Delay (s)		9.4			11.1	7.7		12.7	11.9		16.2	
Level of Service		A			B	A		B	B		B	
Approach Delay (s)		9.4			10.8			12.4			16.2	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.96		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	3390		1770	3539	1764	
Flt Permitted	1.00		0.22	1.00	0.96	
Satd. Flow (perm)	3390		407	3539	1764	
Volume (vph)	625	245	20	760	440	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	694	272	22	844	489	33
RTOR Reduction (vph)	26	0	0	0	3	0
Lane Group Flow (vph)	940	0	22	844	519	0
Turn Type	Prot		Perm			
Protected Phases	2			6	8	
Permitted Phases			6			
Actuated Green, G (s)	58.8		58.8	58.8	35.0	
Effective Green, g (s)	59.8		59.8	59.8	36.0	
Actuated g/C Ratio	0.54		0.54	0.54	0.33	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1843		221	1924	577	
v/s Ratio Prot	c0.28			0.24	c0.29	
v/s Ratio Perm			0.05			
v/c Ratio	0.51		0.10	0.44	0.90	
Uniform Delay, d1	15.8		12.1	15.0	35.3	
Progression Factor	1.00		1.21	1.20	1.00	
Incremental Delay, d2	1.0		0.9	0.7	17.1	
Delay (s)	16.9		15.5	18.7	52.4	
Level of Service	B		B	B	D	
Approach Delay (s)	16.9			18.6	52.4	
Approach LOS	B			B	D	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	1.00	1.00	0.88
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3292		1711	1863	1801	2787
Flt Permitted	0.96		0.24	1.00	1.00	1.00
Satd. Flow (perm)	3292		437	1863	1801	2787
Volume (vph)	480	55	15	385	555	750
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	533	61	17	428	617	833
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	588	0	17	428	617	833
Turn Type			Perm			Perm
Protected Phases	2			4	8	
Permitted Phases			4			8
Actuated Green, G (s)	52.8		71.0	71.0	71.0	71.0
Effective Green, g (s)	53.8		72.0	72.0	72.0	72.0
Actuated g/C Ratio	0.38		0.51	0.51	0.51	0.51
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1265		225	958	926	1433
v/s Ratio Prot	c0.18			0.23	c0.34	
v/s Ratio Perm			0.04			0.30
v/c Ratio	0.47		0.08	0.45	0.67	0.58
Uniform Delay, d1	32.3		17.2	21.4	25.1	23.6
Progression Factor	0.85		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2		0.7	1.5	1.8	0.6
Delay (s)	28.7		17.8	22.9	26.9	24.2
Level of Service	C		B	C	C	C
Approach Delay (s)	28.7			22.8	25.3	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

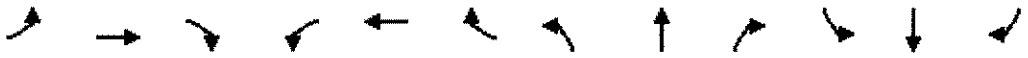
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.91			0.98		1.00	0.98	
Flt Protected		0.99			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		1919			1805			1941		1711	1765	
Flt Permitted		0.81			0.96			0.93		0.59	1.00	
Satd. Flow (perm)		1585			1744			1817		1059	1765	
Volume (vph)	40	75	20	25	75	185	15	90	15	180	260	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	83	22	28	83	206	17	100	17	200	289	44
RTOR Reduction (vph)	0	9	0	0	91	0	0	7	0	0	6	0
Lane Group Flow (vph)	0	140	0	0	226	0	0	127	0	200	327	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.4			11.4			11.9		23.2	23.2	
Effective Green, g (s)		12.4			12.4			12.9		24.2	24.2	
Actuated g/C Ratio		0.26			0.26			0.27		0.51	0.51	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		416			457			496		642	903	
v/s Ratio Prot										0.05	c0.19	
v/s Ratio Perm		0.09			c0.13			0.07		0.11		
v/c Ratio		0.34			0.49			0.26		0.31	0.36	
Uniform Delay, d1		14.1			14.8			13.4		6.7	6.9	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.5			0.8			0.3		0.3	0.2	
Delay (s)		14.6			15.6			13.7		7.0	7.2	
Level of Service		B			B			B		A	A	
Approach Delay (s)		14.6			15.6			13.7			7.1	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

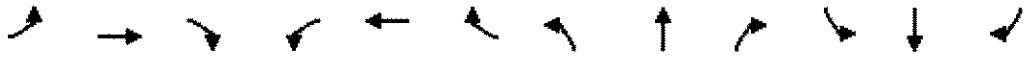
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.96	0.95	1.00
Satd. Flow (prot)	1863	1583	1681	1698	1770	2787
Flt Permitted	1.00	1.00	0.95	0.48	0.95	1.00
Satd. Flow (perm)	1863	1583	1681	850	1770	2787
Volume (vph)	125	300	705	60	135	410
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	139	333	783	67	150	456
RTOR Reduction (vph)	0	164	0	0	0	142
Lane Group Flow (vph)	139	169	414	436	150	314
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	28.3	69.1	49.7	83.0	40.8	95.5
Effective Green, g (s)	29.3	71.1	50.7	84.0	41.8	96.5
Actuated g/C Ratio	0.21	0.51	0.36	0.60	0.30	0.69
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	390	804	609	817	528	1921
v/s Ratio Prot	0.07	0.06	c0.25	0.19	c0.08	0.11
v/s Ratio Perm		0.04		c0.13		
v/c Ratio	0.36	0.21	0.68	0.53	0.28	0.16
Uniform Delay, d1	47.3	19.0	37.8	16.5	37.6	7.6
Progression Factor	1.00	1.00	0.45	0.44	0.70	5.22
Incremental Delay, d2	0.6	0.1	2.5	0.6	1.3	0.0
Delay (s)	47.9	19.1	19.5	7.9	27.5	39.8
Level of Service	D	B	B	A	C	D
Approach Delay (s)	27.6			13.5	36.7	
Approach LOS	C			B	D	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



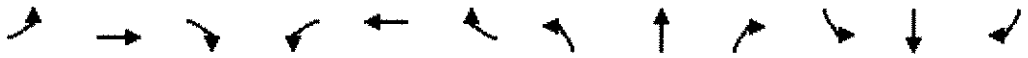
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.87			0.97		1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1623			1750		1770	3481		1770	3534	
Flt Permitted		0.98			0.55		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1602			984		1770	3481		1770	3534	
Volume (vph)	5	0	75	40	10	15	5	525	65	5	990	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	83	44	11	17	6	583	72	6	1100	11
RTOR Reduction (vph)	0	76	0	0	9	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	13	0	0	63	0	6	652	0	6	1111	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		11.5			11.5		1.6	105.7		1.6	105.7	
Effective Green, g (s)		12.5			12.5		2.6	106.7		2.6	106.7	
Actuated g/C Ratio		0.09			0.09		0.02	0.76		0.02	0.76	
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)		143			88		33	2653		33	2693	
v/s Ratio Prot							c0.00	0.19		0.00	c0.31	
v/s Ratio Perm		0.01			c0.06							
v/c Ratio		0.09			0.71		0.18	0.25		0.18	0.41	
Uniform Delay, d1		58.5			62.0		67.7	4.9		67.7	5.8	
Progression Factor		1.00			0.92		0.97	0.32		1.37	0.44	
Incremental Delay, d2		0.3			21.2		2.6	0.2		2.2	0.4	
Delay (s)		58.8			78.4		68.3	1.8		94.6	2.9	
Level of Service		E			E		E	A		F	A	
Approach Delay (s)		58.8			78.4			2.4			3.4	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.99		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1762			1826		1770	3534		1770	3520	
Flt Permitted		0.82			0.82		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1467			1512		1770	3534		1770	3520	
Volume (vph)	65	120	85	25	95	10	55	520	5	10	1055	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	133	94	28	106	11	61	578	6	11	1172	44
RTOR Reduction (vph)	0	13	0	0	2	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	286	0	0	143	0	61	584	0	11	1215	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		29.6			29.6		8.1	86.0		3.2	81.1	
Effective Green, g (s)		30.6			30.6		9.1	87.0		4.2	82.1	
Actuated g/C Ratio		0.22			0.22		0.06	0.62		0.03	0.59	
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)		321			330		115	2196		53	2064	
v/s Ratio Prot							c0.03	0.17		0.01	c0.35	
v/s Ratio Perm		c0.20			0.09							
v/c Ratio		0.89			0.43		0.53	0.27		0.21	0.59	
Uniform Delay, d1		53.1			47.2		63.4	12.0		66.3	18.3	
Progression Factor		1.00			1.00		0.93	1.49		1.32	0.30	
Incremental Delay, d2		25.2			0.9		4.5	0.3		1.8	1.2	
Delay (s)		78.3			48.1		63.7	18.2		89.1	6.6	
Level of Service		E			D		E	B		F	A	
Approach Delay (s)		78.3			48.1			22.5			7.4	
Approach LOS		E			D			C			A	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



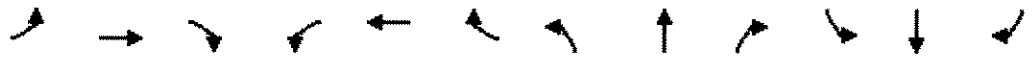
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.99		1.00	0.98		1.00	0.99	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1798		1770	3472		1770	3519	
Flt Permitted		0.70	1.00		0.67		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1307	1583		1246		1770	3472		1770	3519	
Volume (vph)	60	25	105	90	50	5	85	515	75	5	1115	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	28	117	100	56	6	94	572	83	6	1239	50
RTOR Reduction (vph)	0	0	98	0	1	0	0	5	0	0	2	0
Lane Group Flow (vph)	0	95	19	0	161	0	94	650	0	6	1287	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		21.8	21.8		21.8		12.0	95.4		1.6	85.0	
Effective Green, g (s)		22.8	22.8		22.8		13.0	96.4		2.6	86.0	
Actuated g/C Ratio		0.16	0.16		0.16		0.09	0.69		0.02	0.61	
Clearance Time (s)		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	
Lane Grp Cap (vph)		213	258		203		164	2391		33	2162	
v/s Ratio Prot							c0.05	0.19		0.00	c0.37	
v/s Ratio Perm		0.07	0.01		c0.13							
v/c Ratio		0.45	0.07		0.79		0.57	0.27		0.18	0.60	
Uniform Delay, d1		52.9	49.7		56.3		60.8	8.4		67.7	16.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.31	0.23	
Incremental Delay, d2		1.5	0.1		18.9		4.8	0.3		2.2	1.0	
Delay (s)		54.4	49.8		75.2		65.6	8.6		91.1	4.7	
Level of Service		D	D		E		E	A		F	A	
Approach Delay (s)		51.8			75.2			15.8			5.1	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	120	75	50	165	15	15	150	25	25	250	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	133	83	56	183	17	17	167	28	28	278	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	222	256	211	317
Volume Left (vph)	6	56	17	28
Volume Right (vph)	83	17	28	11
Hadj (s)	-0.19	0.04	-0.03	0.03
Departure Headway (s)	5.8	5.9	5.9	5.8
Degree Utilization, x	0.36	0.42	0.35	0.51
Capacity (veh/h)	545	550	541	580
Control Delay (s)	12.0	13.2	12.0	14.6
Approach Delay (s)	12.0	13.2	12.0	14.6
Approach LOS	B	B	B	B

Intersection Summary			
Delay	13.1		
HCM Level of Service	B		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	125	40	50	120	10	60	170	55	15	350	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	139	44	56	133	11	67	189	61	17	389	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	194	200	317	417
Volume Left (vph)	11	56	67	17
Volume Right (vph)	44	11	61	11
Hadj (s)	-0.09	0.06	-0.04	0.03
Departure Headway (s)	6.5	6.7	6.0	5.9
Degree Utilization, x	0.35	0.37	0.53	0.68
Capacity (veh/h)	474	467	553	574
Control Delay (s)	13.1	13.5	15.6	20.7
Approach Delay (s)	13.1	13.5	15.6	20.7
Approach LOS	B	B	C	C

Intersection Summary			
Delay	16.7		
HCM Level of Service	C		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	65	5	10	100	95	5	25	10	145	50	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	72	6	11	111	106	6	28	11	161	56	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	133	228	44	228
Volume Left (vph)	56	11	6	161
Volume Right (vph)	6	106	11	11
Hadj (s)	0.09	-0.23	-0.09	0.15
Departure Headway (s)	5.0	4.6	5.0	5.0
Degree Utilization, x	0.18	0.29	0.06	0.32
Capacity (veh/h)	669	740	645	676
Control Delay (s)	9.1	9.4	8.4	10.3
Approach Delay (s)	9.1	9.4	8.4	10.3
Approach LOS	A	A	A	B

Intersection Summary			
Delay	9.6		
HCM Level of Service	A		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	20	25	5	30	15	870	50	50	1290	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	22	28	6	33	17	967	56	56	1433	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1247	
pX, platoon unblocked												
vC, conflicting volume	2103	2606	722	1881	2583	511	1444			1022		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2103	2606	722	1881	2583	511	1444			1022		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	45	74	94	7	75	93	96			92		
cM capacity (veh/h)	20	21	369	30	22	508	465			675		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	39	67	500	539	772	728
Volume Left	11	28	17	0	56	0
Volume Right	22	33	0	56	0	11
cSH	45	54	465	1700	675	1700
Volume to Capacity	0.87	1.24	0.04	0.32	0.08	0.43
Queue Length 95th (ft)	86	147	3	0	7	0
Control Delay (s)	234.0	328.0	1.1	0.0	2.2	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	234.0	328.0	0.5		1.1	
Approach LOS	F	F				

Intersection Summary			
Average Delay	12.6		
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	25	55	845	20	70	1280
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	61	939	22	78	1422
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked						
vC, conflicting volume	1817	481			961	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1817	481			961	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	55	89			89	
cM capacity (veh/h)	62	532			712	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	89	626	335	552	948
Volume Left	28	0	0	78	0
Volume Right	61	0	22	0	0
cSH	157	1700	1700	712	1700
Volume to Capacity	0.56	0.37	0.20	0.11	0.56
Queue Length 95th (ft)	73	0	0	9	0
Control Delay (s)	54.1	0.0	0.0	2.9	0.0
Lane LOS	F			A	
Approach Delay (s)	54.1	0.0		1.1	
Approach LOS	F				

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	35	60	350	10	45	525
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	67	389	11	50	583
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.74					
vC, conflicting volume	1078	394			400	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1104	394			400	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	90			96	
cM capacity (veh/h)	166	655			1159	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	106	400	633
Volume Left	39	0	50
Volume Right	67	11	0
cSH	314	1700	1159
Volume to Capacity	0.34	0.24	0.04
Queue Length 95th (ft)	36	0	3
Control Delay (s)	22.1	0.0	1.2
Lane LOS	C		A
Approach Delay (s)	22.1	0.0	1.2
Approach LOS	C		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	65	5	10	275	500	55
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	6	11	306	556	61
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.77	0.77	0.77			
vC, conflicting volume	914	586	617			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	888	459	499			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	70	99	99			
cM capacity (veh/h)	237	461	815			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	317	617
Volume Left	72	11	0
Volume Right	6	0	61
cSH	246	815	1700
Volume to Capacity	0.32	0.01	0.36
Queue Length 95th (ft)	33	1	0
Control Delay (s)	26.3	0.5	0.0
Lane LOS	D	A	
Approach Delay (s)	26.3	0.5	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

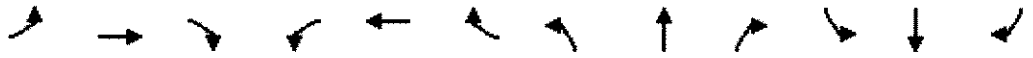
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1839		1770	1784			1947			1756	
Flt Permitted	0.26	1.00		0.34	1.00			0.90			0.94	
Satd. Flow (perm)	471	1839		633	1784			1768			1663	
Volume (vph)	70	385	35	40	460	30	50	215	25	35	235	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	428	39	44	511	33	56	239	28	39	261	50
RTOR Reduction (vph)	0	4	0	0	3	0	0	3	0	0	5	0
Lane Group Flow (vph)	78	463	0	44	541	0	0	320	0	0	345	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	20.3	20.3		20.3	20.3			16.9			16.9	
Effective Green, g (s)	21.3	21.3		21.3	21.3			17.9			17.9	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.35			0.35	
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)	194	756		260	734			611			575	
v/s Ratio Prot		0.25			c0.30							
v/s Ratio Perm	0.17			0.07				0.18			c0.21	
v/c Ratio	0.40	0.61		0.17	0.74			0.52			0.60	
Uniform Delay, d1	10.8	12.0		9.7	12.9			13.5			14.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.4	1.5		0.3	3.9			0.8			1.7	
Delay (s)	12.1	13.5		10.0	16.8			14.4			15.7	
Level of Service	B	B		A	B			B			B	
Approach Delay (s)		13.3			16.3			14.4			15.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1881		1652	1768				
Flt Permitted	0.27	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	545	1739			1881		1652	1768				
Volume (vph)	35	460	0	0	500	40	65	255	35	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	511	0	0	556	44	72	283	39	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	5	0	0	0	0
Lane Group Flow (vph)	39	511	0	0	596	0	72	317	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	21.9	21.9			21.9		13.7	13.7				
Effective Green, g (s)	22.9	22.9			22.9		14.7	14.7				
Actuated g/C Ratio	0.48	0.48			0.48		0.31	0.31				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	260	830			897		506	541				
v/s Ratio Prot		0.29			c0.32			c0.18				
v/s Ratio Perm	0.07						0.04					
v/c Ratio	0.15	0.62			0.66		0.14	0.59				
Uniform Delay, d1	7.1	9.3			9.6		12.1	14.1				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.3	1.4			1.9		0.1	1.6				
Delay (s)	7.3	10.7			11.5		12.2	15.7				
Level of Service	A	B			B		B	B				
Approach Delay (s)		10.4			11.5			15.1			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

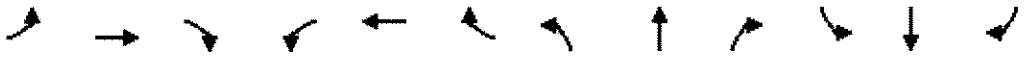


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1655		1711	1801	1531		1601		1652	1739	1583
Flt Permitted	0.42	1.00		0.49	1.00	1.00		0.46		0.80	1.00	1.00
Satd. Flow (perm)	680	1655		877	1801	1531		744		1386	1739	1583
Volume (vph)	110	270	25	70	350	155	5	50	25	210	275	95
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	300	28	78	389	172	6	56	28	233	306	106
RTOR Reduction (vph)	0	4	0	0	0	102	0	18	0	0	0	70
Lane Group Flow (vph)	122	324	0	78	389	70	0	72	0	233	306	36
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	21.2	21.2		20.8	20.8	20.8		5.0		17.1	17.1	17.1
Effective Green, g (s)	22.2	22.2		21.8	21.8	21.8		6.0		18.1	18.1	18.1
Actuated g/C Ratio	0.42	0.42		0.41	0.41	0.41		0.11		0.34	0.34	0.34
Clearance Time (s)	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
Lane Grp Cap (vph)	283	689		359	737	626		84		511	591	538
v/s Ratio Prot		0.20			c0.22					0.07	c0.18	
v/s Ratio Perm	0.18			0.09		0.05		c0.10		0.09		0.02
v/c Ratio	0.43	0.47		0.22	0.53	0.11		0.86		0.46	0.52	0.07
Uniform Delay, d1	11.1	11.3		10.2	11.9	9.8		23.2		14.7	14.1	11.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.5		0.3	0.7	0.1		54.7		0.6	0.8	0.1
Delay (s)	12.1	11.8		10.5	12.6	9.8		77.9		15.3	14.9	11.9
Level of Service	B	B		B	B	A		E		B	B	B
Approach Delay (s)		11.9			11.6			77.9			14.6	
Approach LOS		B			B			E			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1734	1478	1486	1525			1823	1794	1593	1840	
Flt Permitted		0.97	1.00	0.53	1.00			0.82	1.00	0.64	1.00	
Satd. Flow (perm)		1683	1478	830	1525			1520	1794	1081	1840	
Volume (vph)	15	260	85	60	320	65	70	90	60	100	110	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	289	94	67	356	72	78	100	67	111	122	11
RTOR Reduction (vph)	0	0	41	0	9	0	0	0	39	0	3	0
Lane Group Flow (vph)	0	306	53	67	419	0	0	178	28	111	130	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		17.4	17.4	17.4	17.4			12.3	12.3	12.3	12.3	
Effective Green, g (s)		18.4	18.4	18.4	18.4			13.3	13.3	13.3	13.3	
Actuated g/C Ratio		0.41	0.41	0.41	0.41			0.30	0.30	0.30	0.30	
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)		693	608	342	628			452	534	322	547	
v/s Ratio Prot					c0.27						0.07	
v/s Ratio Perm		0.18	0.04	0.08				c0.12	0.02	0.10		
v/c Ratio		0.44	0.09	0.20	0.67			0.39	0.05	0.34	0.24	
Uniform Delay, d1		9.5	8.0	8.4	10.7			12.5	11.2	12.3	11.9	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.1	0.3	2.7			0.6	0.0	0.6	0.2	
Delay (s)		9.9	8.1	8.7	13.4			13.1	11.2	12.9	12.1	
Level of Service		A	A	A	B			B	B	B	B	
Approach Delay (s)		9.5			12.7			12.6			12.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

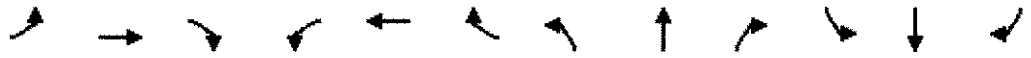


Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			0.99			0.99	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1794			1926			1848			2092	
Flt Permitted		0.94			0.89			0.98			0.99	
Satd. Flow (perm)		1708			1747			1808			2080	
Volume (vph)	15	45	15	20	30	5	15	240	10	5	235	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	17	22	33	6	17	267	11	6	261	17
RTOR Reduction (vph)	0	11	0	0	0	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	73	0	0	61	0	0	293	0	0	281	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		342			349			701			806	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			c0.16			0.14	
v/c Ratio		0.21			0.17			0.42			0.35	
Uniform Delay, d1		26.7			26.5			17.9			17.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.1			1.8			1.2	
Delay (s)		28.2			27.6			19.7			18.5	
Level of Service		C			C			B			B	
Approach Delay (s)		28.2			27.6			19.7			18.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	1.00		
Flt Protected	0.95	0.95		
Satd. Flow (prot)	1888	1886		
Flt Permitted	0.95	0.95		
Satd. Flow (perm)	1888	1886		
Volume (vph)	15	335	5	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	372	6	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	383	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	495		
v/s Ratio Prot	0.01	c0.20		
v/s Ratio Perm				
v/c Ratio	0.03	0.77		
Uniform Delay, d1	22.0	27.3		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	11.2		
Delay (s)	22.1	38.5		
Level of Service	C	D		
Approach Delay (s)		37.8		
Approach LOS		D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1583		1814	1583	1770	3534		1770	3497	
Flt Permitted		0.74	1.00		0.80	1.00	0.20	1.00		0.26	1.00	
Satd. Flow (perm)		1386	1583		1496	1583	366	3534		486	3497	
Volume (vph)	55	20	145	30	25	35	135	975	10	30	820	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	22	161	33	28	39	150	1083	11	33	911	78
RTOR Reduction (vph)	0	0	138	0	0	33	0	1	0	0	8	0
Lane Group Flow (vph)	0	83	23	0	61	6	150	1093	0	33	981	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		8.3	8.3		8.3	8.3	41.5	41.5		30.5	30.5	
Effective Green, g (s)		8.3	8.3		8.3	8.3	41.5	41.5		30.5	30.5	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.72	0.72		0.53	0.53	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		199	227		215	227	433	2537		256	1845	
v/s Ratio Prot							0.04	c0.31			c0.28	
v/s Ratio Perm		c0.06	0.01		0.04	0.00	0.21			0.07		
v/c Ratio		0.42	0.10		0.28	0.02	0.35	0.43		0.13	0.53	
Uniform Delay, d1		22.5	21.5		22.1	21.3	4.0	3.3		6.9	9.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4	0.2		0.7	0.0	0.5	0.1		0.2	0.3	
Delay (s)		24.0	21.7		22.8	21.3	4.5	3.4		7.1	9.3	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		22.5			22.2			3.6			9.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1478	1770	1909		1652	3297		1652	3295	
Flt Permitted		0.79	1.00	0.71	1.00		0.24	1.00		0.95	1.00	
Satd. Flow (perm)		1415	1478	1329	1909		424	3297		1652	3295	
Volume (vph)	35	25	165	30	20	35	175	1170	15	40	870	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	28	183	33	22	39	194	1300	17	44	967	17
RTOR Reduction (vph)	0	0	162	0	35	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	67	21	33	26	0	194	1316	0	44	983	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.7	7.7	7.7	7.7		41.5	41.5		3.6	28.3	
Effective Green, g (s)		7.7	7.7	7.7	7.7		42.5	42.5		3.6	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.62	0.62		0.05	0.43	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		160	167	150	215		566	2052		87	1414	
v/s Ratio Prot					0.01		0.08	c0.40		0.03	c0.30	
v/s Ratio Perm		c0.05	0.01	0.02			0.13					
v/c Ratio		0.42	0.12	0.22	0.12		0.34	0.64		0.51	0.70	
Uniform Delay, d1		28.2	27.3	27.6	27.3		10.6	8.1		31.5	15.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.1	0.3	0.1		1.6	1.6		1.7	2.8	
Delay (s)		28.9	27.4	27.8	27.4		12.3	9.7		33.2	18.7	
Level of Service		C	C	C	C		B	A		C	B	
Approach Delay (s)		27.8			27.5			10.0			19.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1700			3539			3537	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1700			3539			3537	
Volume (vph)	0	0	0	1305	135	0	0	800	0	0	1365	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1450	150	0	0	889	0	0	1517	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	779	821	0	0	889	0	0	1522	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			30.0			30.0	
Effective Green, g (s)				30.0	30.0			32.0			32.0	
Actuated g/C Ratio				0.43	0.43			0.46			0.46	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				720	729			1618			1617	
v/s Ratio Prot								0.25			c0.43	
v/s Ratio Perm				0.46	0.48							
v/c Ratio				1.08	1.13			0.55			0.94	
Uniform Delay, d1				20.0	20.0			13.8			18.1	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				57.9	73.8			0.4			11.3	
Delay (s)				77.9	93.8			14.2			29.4	
Level of Service				E	F			B			C	
Approach Delay (s)		0.0			86.0			14.2			29.4	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.3%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	130	60	65	115	15	20	270	55	60	255	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	144	67	72	128	17	22	300	61	67	283	28

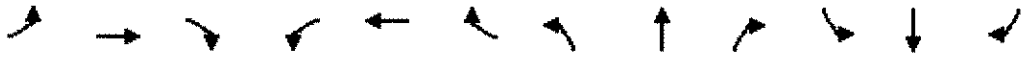
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	233	217	383	378
Volume Left (vph)	22	72	22	67
Volume Right (vph)	67	17	61	28
Hadj (s)	-0.12	0.05	-0.05	0.03
Departure Headway (s)	6.8	7.0	6.3	6.4
Degree Utilization, x	0.44	0.42	0.67	0.67
Capacity (veh/h)	457	440	537	526
Control Delay (s)	15.2	15.1	21.3	21.4
Approach Delay (s)	15.2	15.1	21.3	21.4
Approach LOS	C	C	C	C

Intersection Summary			
Delay	19.0		
HCM Level of Service	C		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	145	5	345	210	5	590
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	161	6	383	233	6	656
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.95					
vC, conflicting volume	1167	500			617	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1176	500			617	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	19	99			99	
cM capacity (veh/h)	199	571			963	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	167	617	661
Volume Left	161	0	6
Volume Right	6	233	0
cSH	203	1700	963
Volume to Capacity	0.82	0.36	0.01
Queue Length 95th (ft)	149	0	0
Control Delay (s)	72.6	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	72.6	0.0	0.2
Approach LOS	F		

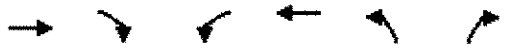
Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	0	50	10	0	10	55	955	5	5	880	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	0	56	11	0	11	61	1061	6	6	978	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1664	2189	500	1742	2197	533	1000			1067		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1664	2189	500	1742	2197	533	1000			1067		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	61	100	89	76	100	98	91			99		
cM capacity (veh/h)	57	41	516	46	40	491	688			649		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	22	592	536	494	511
Volume Left	22	11	61	0	6	0
Volume Right	56	11	0	6	0	22
cSH	157	84	688	1700	649	1700
Volume to Capacity	0.49	0.27	0.09	0.32	0.01	0.30
Queue Length 95th (ft)	59	24	7	0	1	0
Control Delay (s)	48.4	62.8	2.4	0.0	0.2	0.0
Lane LOS	E	F	A		A	
Approach Delay (s)	48.4	62.8	1.2		0.1	
Approach LOS	E	F				

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	125	20	35	145	35	65
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	22	39	161	39	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			161		389	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			161		389	150
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	92
cM capacity (veh/h)			1418		598	896

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	161	200	111
Volume Left	0	39	39
Volume Right	22	0	72
cSH	1700	1418	763
Volume to Capacity	0.09	0.03	0.15
Queue Length 95th (ft)	0	2	13
Control Delay (s)	0.0	1.7	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	10.5
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD ALT1*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*580*	*265*	*30*	*690*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*644*	*294*	*33*	*766*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*55*	*0*	*25*	*75*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*61*	*0*	*27*	*83*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*33*			*61*			*110*
C (m) (vph)		*726*			*541*			*182*
v/c		*0.05*			*0.11*			*0.60*
95% queue length		*0.14*			*0.38*			*3.34*
Control Delay		*10.2*			*12.5*			*51.1*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*12.5*			*51.1*		
Approach LOS	--	--	*B*			*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD ALT1*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*75*	*505*	*0*	*0*	*735*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*83*	*561*	*0*	*0*	*816*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*150*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*166*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*83*				*166*			
C (m) (vph)	*812*				*97*			
v/c	*0.10*				*1.71*			
95% queue length	*0.34*				*13.30*			
Control Delay	*9.9*				*435.0*			
LOS	*A*				*F*			
Approach Delay	--	--	*435.0*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 1 (FOUR-LANE)

2028 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1808	1583		1817	1583	1770	3506		1770	3531	
Flt Permitted		0.81	1.00		0.83	1.00	0.24	1.00		0.95	1.00	
Satd. Flow (perm)		1504	1583		1541	1583	452	3506		1770	3531	
Volume (vph)	15	10	45	50	50	85	65	590	40	125	1035	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	11	50	56	56	94	72	656	44	139	1150	17
RTOR Reduction (vph)	0	0	44	0	0	71	0	0	0	0	0	0
Lane Group Flow (vph)	0	28	6	0	112	23	72	700	0	139	1167	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		13.3	13.3		13.3	27.7	71.6	71.6		14.4	91.0	
Effective Green, g (s)		14.3	14.3		14.3	29.7	72.6	72.6		15.4	92.0	
Actuated g/C Ratio		0.12	0.12		0.12	0.25	0.60	0.60		0.13	0.77	
Clearance Time (s)		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	
Lane Grp Cap (vph)		179	189		184	392	273	2121		227	2707	
v/s Ratio Prot			0.00			0.01		0.20		c0.08	c0.33	
v/s Ratio Perm		0.02			c0.07		0.16					
v/c Ratio		0.16	0.03		0.61	0.06	0.26	0.33		0.61	0.43	
Uniform Delay, d1		47.4	46.7		50.2	34.5	11.1	11.7		49.5	4.9	
Progression Factor		1.00	1.00		1.00	1.00	0.38	0.44		1.00	1.00	
Incremental Delay, d2		0.4	0.1		5.6	0.1	2.2	0.4		4.8	0.5	
Delay (s)		47.8	46.8		55.8	34.5	6.5	5.5		54.3	5.4	
Level of Service		D	D		E	C	A	A		D	A	
Approach Delay (s)		47.2			46.1			5.6			10.6	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

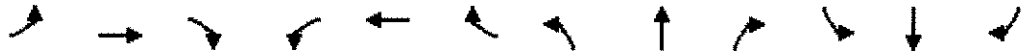
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.89		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583			1646		1770	3534		1770	3526	
Flt Permitted	0.39	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	720	1583			1609		1770	3534		1770	3526	
Volume (vph)	25	0	5	15	10	120	5	555	5	110	1000	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	0	6	17	11	133	6	617	6	122	1111	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	28	6	0	0	161	0	6	623	0	122	1139	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	16.5	16.5			16.5		1.6	68.9		13.4	80.7	
Effective Green, g (s)	17.5	17.5			17.5		2.6	69.9		14.4	81.7	
Actuated g/C Ratio	0.15	0.15			0.15		0.02	0.58		0.12	0.68	
Clearance Time (s)	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	
Lane Grp Cap (vph)	105	231			235		38	2059		212	2401	
v/s Ratio Prot		0.00					0.00	0.18		c0.07	c0.32	
v/s Ratio Perm	0.04				c0.10							
v/c Ratio	0.27	0.03			0.69		0.16	0.30		0.58	0.47	
Uniform Delay, d1	45.5	43.9			48.6		57.6	12.7		49.9	9.0	
Progression Factor	1.00	1.00			1.00		1.04	0.63		1.23	0.75	
Incremental Delay, d2	1.4	0.0			8.0		1.9	0.4		3.5	0.6	
Delay (s)	46.9	44.0			56.6		61.7	8.3		64.7	7.4	
Level of Service	D	D			E		E	A		E	A	
Approach Delay (s)		46.4			56.6			8.9			12.9	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	60.5%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.96		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1696		1711	3390		1711	3388	
Flt Permitted		0.63			0.82		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1127			1419		1711	3390		1711	3388	
Volume (vph)	60	20	5	70	40	40	5	465	30	80	875	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	22	6	78	44	44	6	517	33	89	972	67
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	95	0	0	166	0	6	550	0	89	1039	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		18.3			18.3		1.6	71.0		9.5	78.9	
Effective Green, g (s)		19.3			19.3		2.6	72.0		10.5	79.9	
Actuated g/C Ratio		0.16			0.16		0.02	0.60		0.09	0.67	
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)		181			228		37	2034		150	2256	
v/s Ratio Prot							0.00	0.16		c0.05	c0.31	
v/s Ratio Perm		0.08			c0.12							
v/c Ratio		0.52			0.73		0.16	0.27		0.59	0.46	
Uniform Delay, d1		46.1			47.9		57.6	11.5		52.7	9.7	
Progression Factor		1.00			1.00		0.78	1.55		1.20	0.13	
Incremental Delay, d2		2.7			11.0		1.9	0.3		5.6	0.6	
Delay (s)		48.9			58.9		46.9	18.1		68.8	1.9	
Level of Service		D			E		D	B		E	A	
Approach Delay (s)		48.9			58.9			18.4			7.2	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.99			1.00	0.85		1.00	0.85		0.98	
Flt Protected		0.99			1.00	1.00		0.99	1.00		0.99	
Satd. Flow (prot)		1833			1857	1583		1843	1583		1800	
Flt Permitted		0.90			0.97	1.00		0.90	1.00		0.89	
Satd. Flow (perm)		1659			1815	1583		1679	1583		1619	
Volume (vph)	45	165	10	15	225	45	40	145	15	45	140	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	183	11	17	250	50	44	161	17	50	156	44
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	13	0	0	0
Lane Group Flow (vph)	0	244	0	0	267	21	0	205	4	0	250	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		15.4			15.4	15.4		9.4	9.4		9.4	
Effective Green, g (s)		16.4			16.4	16.4		10.4	10.4		10.4	
Actuated g/C Ratio		0.41			0.41	0.41		0.26	0.26		0.26	
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)		687			752	656		441	416		425	
v/s Ratio Prot												
v/s Ratio Perm		0.15			c0.15	0.01		0.12	0.00		c0.15	
v/c Ratio		0.36			0.36	0.03		0.46	0.01		0.59	
Uniform Delay, d1		8.0			8.0	6.9		12.3	10.8		12.7	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.3			0.3	0.0		0.8	0.0		2.1	
Delay (s)		8.3			8.3	6.9		13.0	10.8		14.8	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		8.3			8.0			12.9			14.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	39.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.95		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3367		1770	3539	1769	
Flt Permitted	1.00		0.29	1.00	0.95	
Satd. Flow (perm)	3367		538	3539	1769	
Volume (vph)	520	250	20	955	285	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	578	278	22	1061	317	11
RTOR Reduction (vph)	28	0	0	0	2	0
Lane Group Flow (vph)	828	0	22	1061	326	0
Turn Type	Prot		Perm			
Protected Phases	2			6	8	
Permitted Phases			6			
Actuated Green, G (s)	77.4		77.4	77.4	26.4	
Effective Green, g (s)	78.4		78.4	78.4	27.4	
Actuated g/C Ratio	0.65		0.65	0.65	0.23	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2200		351	2312	404	
v/s Ratio Prot	0.25			c0.30	c0.18	
v/s Ratio Perm			0.04			
v/c Ratio	0.38		0.06	0.46	0.81	
Uniform Delay, d1	9.6		7.5	10.3	43.8	
Progression Factor	1.00		0.38	0.41	1.00	
Incremental Delay, d2	0.5		0.3	0.6	11.3	
Delay (s)	10.1		3.2	4.8	55.1	
Level of Service	B		A	A	E	
Approach Delay (s)	10.1			4.8	55.1	
Approach LOS	B			A	E	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	1.00	1.00	0.88
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3306		1711	1863	1801	2787
Flt Permitted	0.96		0.39	1.00	1.00	1.00
Satd. Flow (perm)	3306		703	1863	1801	2787
Volume (vph)	305	20	15	465	380	875
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	339	22	17	517	422	972
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	358	0	17	517	422	972
Turn Type			Perm			Perm
Protected Phases	2			4	8	
Permitted Phases			4			8
Actuated Green, G (s)	40.8		53.0	53.0	53.0	53.0
Effective Green, g (s)	41.8		54.0	54.0	54.0	54.0
Actuated g/C Ratio	0.38		0.49	0.49	0.49	0.49
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1256		345	915	884	1368
v/s Ratio Prot	c0.11			0.28	0.23	
v/s Ratio Perm			0.02			c0.35
v/c Ratio	0.28		0.05	0.57	0.48	0.71
Uniform Delay, d1	23.7		14.6	19.7	18.6	21.9
Progression Factor	0.91		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6		0.3	2.5	0.4	1.8
Delay (s)	22.2		14.9	22.2	19.0	23.7
Level of Service	C		B	C	B	C
Approach Delay (s)	22.2			22.0	22.3	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		1.00			0.91			0.99		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1947			1799			1973		1711	1762	
Flt Permitted		0.69			0.98			0.99		0.47	1.00	
Satd. Flow (perm)		1372			1771			1951		838	1762	
Volume (vph)	35	50	0	10	55	140	10	240	10	130	180	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	56	0	11	61	156	11	267	11	144	200	33
RTOR Reduction (vph)	0	0	0	0	118	0	0	2	0	0	5	0
Lane Group Flow (vph)	0	95	0	0	110	0	0	287	0	144	228	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.7			8.7			20.4		32.3	32.3	
Effective Green, g (s)		9.7			9.7			21.4		33.3	33.3	
Actuated g/C Ratio		0.18			0.18			0.40		0.62	0.62	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		248			320			777		648	1093	
v/s Ratio Prot										0.03	c0.13	
v/s Ratio Perm		c0.07			0.06			c0.15		0.11		
v/c Ratio		0.38			0.34			0.37		0.22	0.21	
Uniform Delay, d1		19.4			19.2			11.4		5.0	4.4	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.0			0.6			0.3		0.2	0.1	
Delay (s)		20.4			19.9			11.7		5.2	4.5	
Level of Service		C			B			B		A	A	
Approach Delay (s)		20.4			19.9			11.7			4.8	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1863	1583	1681	1716	1770	2787
Flt Permitted	1.00	1.00	0.95	0.56	0.95	1.00
Satd. Flow (perm)	1863	1583	1681	991	1770	2787
Volume (vph)	60	115	720	170	225	265
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	128	800	189	250	294
RTOR Reduction (vph)	0	68	0	0	0	67
Lane Group Flow (vph)	67	60	482	507	250	227
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	9.7	49.5	39.3	54.0	39.8	84.1
Effective Green, g (s)	10.7	51.5	40.3	55.0	40.8	85.1
Actuated g/C Ratio	0.10	0.47	0.37	0.50	0.37	0.77
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	181	741	616	761	657	2156
v/s Ratio Prot	0.04	0.03	c0.29	0.24	c0.14	0.08
v/s Ratio Perm		0.01		c0.09		
v/c Ratio	0.37	0.08	0.78	0.67	0.38	0.11
Uniform Delay, d1	46.5	16.2	31.0	20.6	25.3	3.1
Progression Factor	1.00	1.00	0.36	0.37	0.64	1.07
Incremental Delay, d2	1.3	0.0	4.6	1.6	1.6	0.0
Delay (s)	47.8	16.2	15.8	9.2	17.9	3.3
Level of Service	D	B	B	A	B	A
Approach Delay (s)	27.1			12.4	10.0	
Approach LOS	C			B	B	

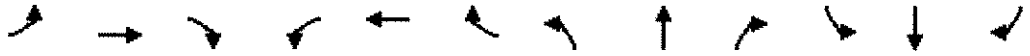
Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.89			0.97		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1641			1786		1770	3469		1770	3529	
Flt Permitted		0.95			0.88		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1580			1600		1770	3469		1770	3529	
Volume (vph)	5	0	25	45	65	25	85	460	70	10	810	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	28	50	72	28	94	511	78	11	900	17
RTOR Reduction (vph)	0	24	0	0	8	0	0	6	0	0	1	0
Lane Group Flow (vph)	0	10	0	0	142	0	94	583	0	11	916	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		14.4			14.4		9.1	72.8		1.6	65.3	
Effective Green, g (s)		15.4			15.4		10.1	73.8		2.6	66.3	
Actuated g/C Ratio		0.14			0.14		0.09	0.67		0.02	0.60	
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)		221			224		163	2327		42	2127	
v/s Ratio Prot							c0.05	0.17		0.01	c0.26	
v/s Ratio Perm		0.01			c0.09							
v/c Ratio		0.04			0.64		0.58	0.25		0.26	0.43	
Uniform Delay, d1		40.9			44.6		47.9	7.2		52.8	11.7	
Progression Factor		1.00			1.19		1.04	0.51		1.33	0.45	
Incremental Delay, d2		0.1			5.7		4.8	0.3		2.3	0.4	
Delay (s)		41.0			59.1		54.5	3.9		72.5	5.7	
Level of Service		D			E		D	A		E	A	
Approach Delay (s)		41.0			59.1			10.9			6.5	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

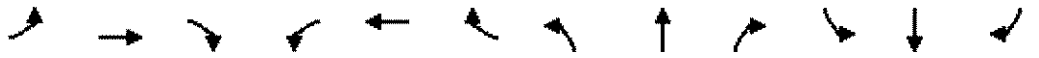
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95			0.95	
Frt		0.97			0.98		1.00	1.00			0.99	
Flt Protected		0.99			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		1780			1808		1770	3530			3503	
Flt Permitted		0.87			0.90		0.95	1.00			1.00	
Satd. Flow (perm)		1563			1645		1770	3530			3503	
Volume (vph)	35	75	35	15	65	15	75	560	10	0	820	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	83	39	17	72	17	83	622	11	0	911	67
RTOR Reduction (vph)	0	11	0	0	7	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	150	0	0	99	0	83	632	0	0	975	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		14.6			14.6		8.7	79.2			65.5	
Effective Green, g (s)		15.6			15.6		9.7	80.2			66.5	
Actuated g/C Ratio		0.14			0.14		0.09	0.73			0.60	
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		222			233		156	2574			2118	
v/s Ratio Prot							c0.05	0.18			c0.28	
v/s Ratio Perm		c0.10			0.06							
v/c Ratio		0.67			0.43		0.53	0.25			0.46	
Uniform Delay, d1		44.8			43.1		48.0	4.9			11.9	
Progression Factor		1.00			1.00		0.82	1.04			0.36	
Incremental Delay, d2		7.9			1.3		3.3	0.2			0.7	
Delay (s)		52.7			44.4		42.8	5.3			5.0	
Level of Service		D			D		D	A			A	
Approach Delay (s)		52.7			44.4			9.7			5.0	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	53.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1826	1583		1774		1770	3489		1770	3508	
Flt Permitted		0.86	1.00		0.48		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1594	1583		878		1770	3489		1770	3508	
Volume (vph)	60	90	115	50	10	5	155	580	60	5	815	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	100	128	56	11	6	172	644	67	6	906	56
RTOR Reduction (vph)	0	0	98	0	3	0	0	4	0	0	3	0
Lane Group Flow (vph)	0	167	30	0	70	0	172	707	0	6	959	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		15.3	15.3		15.3		14.7	71.9		1.6	58.8	
Effective Green, g (s)		16.3	16.3		16.3		15.7	72.9		2.6	59.8	
Actuated g/C Ratio		0.15	0.15		0.15		0.14	0.66		0.02	0.54	
Clearance Time (s)		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	
Lane Grp Cap (vph)		236	235		130		253	2312		42	1907	
v/s Ratio Prot							c0.10	0.20		0.00	c0.27	
v/s Ratio Perm		c0.10	0.02		0.08							
v/c Ratio		0.71	0.13		0.54		0.68	0.31		0.14	0.50	
Uniform Delay, d1		44.6	40.7		43.3		44.8	7.8		52.6	15.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.39	0.18	
Incremental Delay, d2		9.3	0.2		4.2		7.1	0.3		1.4	0.9	
Delay (s)		53.9	40.9		47.5		51.8	8.2		74.6	3.7	
Level of Service		D	D		D		D	A		E	A	
Approach Delay (s)		48.3			47.5			16.7			4.1	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	110	45	25	105	25	10	165	35	10	150	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	122	50	28	117	28	11	183	39	11	167	6

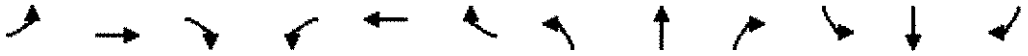
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	183	172	233	183
Volume Left (vph)	11	28	11	11
Volume Right (vph)	50	28	39	6
Hadj (s)	-0.12	-0.03	-0.06	0.03
Departure Headway (s)	5.2	5.3	5.1	5.2
Degree Utilization, x	0.26	0.25	0.33	0.27
Capacity (veh/h)	636	623	659	632
Control Delay (s)	10.0	10.0	10.6	10.1
Approach Delay (s)	10.0	10.0	10.6	10.1
Approach LOS	B	B	B	B

Intersection Summary			
Delay	10.2		
HCM Level of Service	B		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	40	40	55	125	5	50	200	40	5	210	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	44	44	61	139	6	56	222	44	6	233	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	94	206	322	244
Volume Left (vph)	6	61	56	6
Volume Right (vph)	44	6	44	6
Hadj (s)	-0.24	0.08	-0.01	0.02
Departure Headway (s)	5.6	5.6	5.1	5.3
Degree Utilization, x	0.15	0.32	0.46	0.36
Capacity (veh/h)	560	581	656	635
Control Delay (s)	9.5	11.3	12.4	11.2
Approach Delay (s)	9.5	11.3	12.4	11.2
Approach LOS	A	B	B	B

Intersection Summary			
Delay	11.5		
HCM Level of Service	B		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	160	0	10	15	115	5	50	15	145	20	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	178	0	11	17	128	6	56	17	161	22	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	200	156	78	206
Volume Left (vph)	22	11	6	161
Volume Right (vph)	0	128	17	22
Hadj (s)	0.06	-0.44	-0.08	0.13
Departure Headway (s)	4.9	4.5	5.0	5.0
Degree Utilization, x	0.27	0.19	0.11	0.29
Capacity (veh/h)	689	745	656	672
Control Delay (s)	9.7	8.5	8.6	10.0
Approach Delay (s)	9.7	8.5	8.6	10.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.4		
HCM Level of Service	A		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	10	35	5	40	20	795	30	35	1245	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	11	39	6	44	22	883	33	39	1383	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1247	
pX, platoon unblocked												
vC, conflicting volume	1997	2425	694	1728	2411	458	1389			917		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1997	2425	694	1728	2411	458	1389			917		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	81	97	11	81	92	95			95		
cM capacity (veh/h)	26	29	385	44	29	550	489			740		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	22	89	464	475	731	697
Volume Left	6	39	22	0	39	0
Volume Right	11	44	0	33	0	6
cSH	51	77	489	1700	740	1700
Volume to Capacity	0.44	1.16	0.05	0.28	0.05	0.41
Queue Length 95th (ft)	40	165	4	0	4	0
Control Delay (s)	122.2	249.4	1.4	0.0	1.4	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	122.2	249.4	0.7		0.7	
Approach LOS	F	F				

Intersection Summary			
Average Delay	10.7		
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	75	85	745	20	80	1185
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	94	828	22	89	1317
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked						
vC, conflicting volume	1675	425			850	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1675	425			850	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	84			89	
cM capacity (veh/h)	76	578			784	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	178	552	298	528	878
Volume Left	83	0	0	89	0
Volume Right	94	0	22	0	0
cSH	142	1700	1700	784	1700
Volume to Capacity	1.25	0.32	0.18	0.11	0.52
Queue Length 95th (ft)	268	0	0	10	0
Control Delay (s)	219.9	0.0	0.0	3.0	0.0
Lane LOS	F			A	
Approach Delay (s)	219.9	0.0		1.1	
Approach LOS	F				

Intersection Summary			
Average Delay	16.7		
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	60	65	435	30	50	330
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	72	483	33	56	367
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.85					
vC, conflicting volume	978	500			517	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	974	500			517	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	87			95	
cM capacity (veh/h)	226	571			1049	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	139	517	422
Volume Left	67	0	56
Volume Right	72	33	0
cSH	329	1700	1049
Volume to Capacity	0.42	0.30	0.05
Queue Length 95th (ft)	50	0	4
Control Delay (s)	23.7	0.0	1.6
Lane LOS	C		A
Approach Delay (s)	23.7	0.0	1.6
Approach LOS	C		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	70	10	75	400	330	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	11	83	444	367	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.90	0.90	0.90			
vC, conflicting volume	1011	400	433			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1012	333	370			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	65	98	92			
cM capacity (veh/h)	220	638	1069			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	89	528	433
Volume Left	78	83	0
Volume Right	11	0	67
cSH	239	1069	1700
Volume to Capacity	0.37	0.08	0.25
Queue Length 95th (ft)	41	6	0
Control Delay (s)	28.7	2.1	0.0
Lane LOS	D	A	
Approach Delay (s)	28.7	2.1	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1835		1770	1785			1926			1728	
Flt Permitted	0.25	1.00		0.35	1.00			0.97			0.82	
Satd. Flow (perm)	449	1835		651	1785			1877			1442	
Volume (vph)	45	320	35	30	405	25	20	265	75	85	170	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	356	39	33	450	28	22	294	83	94	189	72
RTOR Reduction (vph)	0	6	0	0	3	0	0	7	0	0	7	0
Lane Group Flow (vph)	50	389	0	33	475	0	0	392	0	0	348	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	20.1	20.1		20.1	20.1			25.9			25.9	
Effective Green, g (s)	21.1	21.1		21.1	21.1			26.9			26.9	
Actuated g/C Ratio	0.35	0.35		0.35	0.35			0.44			0.44	
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)	156	637		226	619			830			638	
v/s Ratio Prot		0.21			c0.27							
v/s Ratio Perm	0.11			0.05				0.21			c0.24	
v/c Ratio	0.32	0.61		0.15	0.77			0.47			0.55	
Uniform Delay, d1	14.6	16.4		13.7	17.7			11.9			12.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	1.7		0.3	5.7			0.4			1.0	
Delay (s)	15.8	18.2		14.0	23.3			12.4			13.4	
Level of Service	B	B		B	C			B			B	
Approach Delay (s)		17.9			22.7			12.4			13.4	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.0%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.96				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1868		1652	1724				
Flt Permitted	0.35	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	700	1739			1868		1652	1724				
Volume (vph)	20	330	0	0	430	60	110	190	75	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	367	0	0	478	67	122	211	83	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	14	0	0	0	0
Lane Group Flow (vph)	22	367	0	0	539	0	122	280	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	22.6	22.6			22.6		10.6	10.6				
Effective Green, g (s)	23.6	23.6			23.6		11.6	11.6				
Actuated g/C Ratio	0.52	0.52			0.52		0.25	0.25				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	362	900			967		420	439				
v/s Ratio Prot		0.21			c0.29			c0.16				
v/s Ratio Perm	0.03						0.07					
v/c Ratio	0.06	0.41			0.56		0.29	0.64				
Uniform Delay, d1	5.5	6.7			7.5		13.7	15.1				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.3			0.7		0.4	3.0				
Delay (s)	5.6	7.0			8.2		14.1	18.2				
Level of Service	A	A			A		B	B				
Approach Delay (s)		6.9			8.2			17.0			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

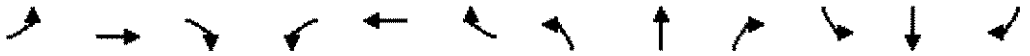
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1670		1711	1801	1531		1626		1652	1739	1583
Flt Permitted	0.49	1.00		0.61	1.00	1.00		0.88		0.73	1.00	1.00
Satd. Flow (perm)	787	1670		1106	1801	1531		1451		1265	1739	1583
Volume (vph)	30	190	5	40	295	115	10	25	5	100	235	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	211	6	44	328	128	11	28	6	111	261	61
RTOR Reduction (vph)	0	1	0	0	0	76	0	5	0	0	0	41
Lane Group Flow (vph)	33	216	0	44	328	52	0	40	0	111	261	20
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	19.5	19.5		20.2	20.2	20.2		8.9		16.3	16.3	16.3
Effective Green, g (s)	20.5	20.5		21.2	21.2	21.2		9.9		17.3	17.3	17.3
Actuated g/C Ratio	0.40	0.40		0.41	0.41	0.41		0.19		0.33	0.33	0.33
Clearance Time (s)	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
Lane Grp Cap (vph)	312	662		454	739	628		278		449	582	530
v/s Ratio Prot		0.13			c0.18					0.02	c0.15	
v/s Ratio Perm	0.04			0.04		0.03		0.03		0.07		0.01
v/c Ratio	0.11	0.33		0.10	0.44	0.08		0.14		0.25	0.45	0.04
Uniform Delay, d1	9.8	10.8		9.4	11.0	9.3		17.4		12.5	13.5	11.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.1	0.4	0.1		0.2		0.3	0.6	0.0
Delay (s)	10.0	11.1		9.5	11.4	9.4		17.6		12.8	14.0	11.6
Level of Service	A	B		A	B	A		B		B	B	B
Approach Delay (s)		11.0			10.7			17.6			13.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)		1736	1478	1486	1516			1838	1794	1593	1840	
Flt Permitted		0.99	1.00	0.63	1.00			0.90	1.00	0.61	1.00	
Satd. Flow (perm)		1715	1478	989	1516			1683	1794	1025	1840	
Volume (vph)	5	175	45	15	250	65	55	150	25	20	60	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	194	50	17	278	72	61	167	28	22	67	6
RTOR Reduction (vph)	0	0	32	0	12	0	0	0	12	0	3	0
Lane Group Flow (vph)	0	200	18	17	338	0	0	228	16	22	70	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		14.3	14.3	14.3	14.3			12.3	12.3	12.3	12.3	
Effective Green, g (s)		15.3	15.3	15.3	15.3			13.3	13.3	13.3	13.3	
Actuated g/C Ratio		0.37	0.37	0.37	0.37			0.32	0.32	0.32	0.32	
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)		631	544	364	558			538	574	328	588	
v/s Ratio Prot					c0.22						0.04	
v/s Ratio Perm		0.12	0.01	0.02				c0.14	0.01	0.02		
v/c Ratio		0.32	0.03	0.05	0.61			0.42	0.03	0.07	0.12	
Uniform Delay, d1		9.4	8.4	8.5	10.7			11.1	9.7	9.8	10.0	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.0	0.1	1.9			0.5	0.0	0.1	0.1	
Delay (s)		9.7	8.4	8.5	12.6			11.7	9.7	9.9	10.1	
Level of Service		A	A	A	B			B	A	A	B	
Approach Delay (s)		9.4			12.4			11.5			10.1	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

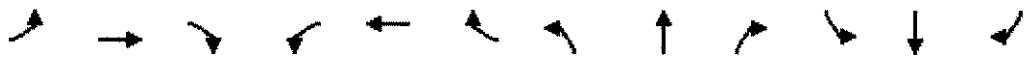


Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.98			1.00			0.99	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1792			1923			1854			2092	
Flt Permitted		0.93			0.96			0.99			0.98	
Satd. Flow (perm)		1690			1864			1833			2062	
Volume (vph)	15	30	10	5	20	5	15	295	5	5	100	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	33	11	6	22	6	17	328	6	6	111	6
RTOR Reduction (vph)	0	9	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	52	0	0	34	0	0	350	0	0	121	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		338			373			710			799	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.19			0.06	
v/c Ratio		0.15			0.09			0.49			0.15	
Uniform Delay, d1		26.4			26.1			18.6			15.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			0.5			2.4			0.4	
Delay (s)		27.4			26.6			21.0			16.3	
Level of Service		C			C			C			B	
Approach Delay (s)		27.4			26.6			21.0			16.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1878		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1878		
Volume (vph)	5	190	10	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	211	11	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	227	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	493		
v/s Ratio Prot	0.00	c0.12		
v/s Ratio Perm				
v/c Ratio	0.01	0.46		
Uniform Delay, d1	21.8	24.7		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	3.1		
Delay (s)	21.9	27.8		
Level of Service	C	C		
Approach Delay (s)		27.7		
Approach LOS		C		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1802	1583		1823	1583	1770	3536		1770	3508	
Flt Permitted		0.78	1.00		0.87	1.00	0.29	1.00		0.30	1.00	
Satd. Flow (perm)		1456	1583		1621	1583	533	3536		561	3508	
Volume (vph)	60	30	105	15	20	15	115	850	5	10	625	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	33	117	17	22	17	128	944	6	11	694	44
RTOR Reduction (vph)	0	0	96	0	0	14	0	1	0	0	6	0
Lane Group Flow (vph)	0	100	21	0	39	3	128	949	0	11	732	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		10.7	10.7		10.7	10.7	39.8	39.8		30.1	30.1	
Effective Green, g (s)		10.7	10.7		10.7	10.7	39.8	39.8		30.1	30.1	
Actuated g/C Ratio		0.18	0.18		0.18	0.18	0.68	0.68		0.51	0.51	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		266	290		296	290	483	2406		289	1805	
v/s Ratio Prot							0.03	c0.27			0.21	
v/s Ratio Perm		c0.07	0.01		0.02	0.00	0.15			0.02		
v/c Ratio		0.38	0.07		0.13	0.01	0.27	0.39		0.04	0.41	
Uniform Delay, d1		21.0	19.8		20.0	19.6	3.9	4.1		7.0	8.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.1		0.2	0.0	0.3	0.1		0.1	0.1	
Delay (s)		21.9	19.9		20.2	19.6	4.2	4.2		7.1	8.9	
Level of Service		C	B		C	B	A	A		A	A	
Approach Delay (s)		20.8			20.0			4.2			8.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3299		1652	3268	
Flt Permitted		0.75	1.00	0.71	1.00		0.31	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		542	3299		1652	3268	
Volume (vph)	50	10	250	15	5	10	90	1035	10	10	660	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	278	17	6	11	100	1150	11	11	733	56
RTOR Reduction (vph)	0	0	247	0	10	0	0	1	0	0	6	0
Lane Group Flow (vph)	0	67	31	17	7	0	100	1160	0	11	783	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		656	2207		21	1366	
v/s Ratio Prot					0.00		0.04	c0.35		0.01	c0.24	
v/s Ratio Perm		c0.05	0.02	0.01			0.06					
v/c Ratio		0.45	0.19	0.11	0.03		0.15	0.53		0.52	0.57	
Uniform Delay, d1		29.1	28.3	28.0	27.8		6.0	5.9		34.4	15.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		0.5	0.9		10.4	1.8	
Delay (s)		29.9	28.5	28.2	27.8		6.5	6.8		44.8	17.4	
Level of Service		C	C	C	C		A	A		D	B	
Approach Delay (s)		28.8			28.0			6.8			17.7	
Approach LOS		C			C			A			B	

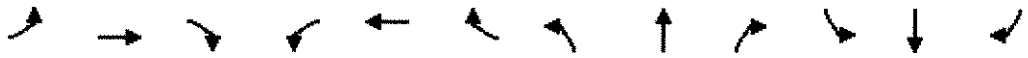
Intersection Summary				
HCM Average Control Delay	13.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	52.2%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1235	50	0	0	785	0	0	1000	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1372	56	0	0	872	0	0	1111	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	695	733	0	0	872	0	0	1111	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.1	28.1			25.8			25.8	
Effective Green, g (s)				30.1	30.1			27.8			27.8	
Actuated g/C Ratio				0.46	0.46			0.42			0.42	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				768	772			1493			1493	
v/s Ratio Prot								0.25			c0.31	
v/s Ratio Perm				0.41	0.43							
v/c Ratio				0.90	0.95			0.58			0.74	
Uniform Delay, d1				16.6	17.2			14.6			16.1	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				14.1	20.7			0.6			2.1	
Delay (s)				30.7	37.9			15.2			18.1	
Level of Service				C	D			B			B	
Approach Delay (s)		0.0			34.4			15.2			18.1	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	90	0	55	145	10	20	335	55	5	150	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	100	0	61	161	11	22	372	61	6	167	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	106	233	456	183
Volume Left (vph)	6	61	22	6
Volume Right (vph)	0	11	61	11
Hadj (s)	0.04	0.06	-0.04	0.00
Departure Headway (s)	6.2	5.9	5.2	5.7
Degree Utilization, x	0.18	0.38	0.66	0.29
Capacity (veh/h)	488	552	659	575
Control Delay (s)	10.6	12.6	17.9	11.0
Approach Delay (s)	10.6	12.6	17.9	11.0
Approach LOS	B	B	C	B

Intersection Summary			
Delay	14.5		
HCM Level of Service	B		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	90	5	365	210	5	355
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	100	6	406	233	6	394
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked						
vC, conflicting volume	928	522			639	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	928	522			639	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	66	99			99	
cM capacity (veh/h)	296	554			945	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	106	639	400
Volume Left	100	0	6
Volume Right	6	233	0
cSH	303	1700	945
Volume to Capacity	0.35	0.38	0.01
Queue Length 95th (ft)	38	0	0
Control Delay (s)	23.1	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	23.1	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	0	60	10	0	10	40	870	5	5	635	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	0	67	11	0	11	44	967	6	6	706	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1333	1811	386	1489	1842	486	772			972		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1333	1811	386	1489	1842	486	772			972		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	100	89	85	100	98	95			99		
cM capacity (veh/h)	105	73	612	73	70	527	839			705		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	94	22	528	489	358	419
Volume Left	28	11	44	0	6	0
Volume Right	67	11	0	6	0	67
cSH	252	128	839	1700	705	1700
Volume to Capacity	0.37	0.17	0.05	0.29	0.01	0.25
Queue Length 95th (ft)	41	15	4	0	1	0
Control Delay (s)	27.6	38.9	1.4	0.0	0.3	0.0
Lane LOS	D	E	A		A	
Approach Delay (s)	27.6	38.9	0.8		0.1	
Approach LOS	D	E				

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	215	35	135	85	10	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	239	39	150	94	11	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			278		653	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			278		653	258
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		97	94
cM capacity (veh/h)			1285		382	780

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	278	244	61
Volume Left	0	150	11
Volume Right	39	0	50
cSH	1700	1285	656
Volume to Capacity	0.16	0.12	0.09
Queue Length 95th (ft)	0	10	8
Control Delay (s)	0.0	5.4	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	5.4	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD ALT1*
Analysis Time Period	*AM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *LOCUST/LEDGE*	North/South Street: *ROUTE 7*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*590*	*295*	*0*	*430*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*655*	*327*	*0*	*477*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*60*	*0*	*30*	*85*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*66*	*0*	*33*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*0*			*66*			*127*
C (m) (vph)		*699*			*523*			*290*
v/c		*0.00*			*0.13*			*0.44*
95% queue length		*0.00*			*0.43*			*2.12*
Control Delay		*10.2*			*12.9*			*26.7*
LOS		*B*			*B*			*D*
Approach Delay	--	--	*12.9*			*26.7*		
Approach LOS	--	--	*B*			*D*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD ALT1*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*60*	*530*	*0*	*0*	*445*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*66*	*588*	*0*	*0*	*494*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*190*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*211*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*66*				*211*			
C (m) (vph)	*1070*				*165*			
v/c	*0.06*				*1.28*			
95% queue length	*0.20*				*12.22*			
Control Delay	*8.6*				*218.0*			
LOS	*A*				*F*			
Approach Delay	--	--	*218.0*					
Approach LOS	--	--	*F*					

BUILD ALTERNATIVE 1 (FOUR-LANE)

2028 PM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1837	1583		1804	1583	1770	3506		1770	3518	
Flt Permitted		0.88	1.00		0.75	1.00	0.34	1.00		0.95	1.00	
Satd. Flow (perm)		1637	1583		1395	1583	626	3506		1770	3518	
Volume (vph)	20	50	95	95	50	135	90	750	50	110	725	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	56	106	106	56	150	100	833	56	122	806	33
RTOR Reduction (vph)	0	0	88	0	0	107	0	0	0	0	0	0
Lane Group Flow (vph)	0	78	18	0	162	44	100	889	0	122	839	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		17.3	17.3		17.3	29.9	59.4	59.4		12.6	77.0	
Effective Green, g (s)		18.3	18.3		18.3	31.9	60.4	60.4		13.6	78.0	
Actuated g/C Ratio		0.17	0.17		0.17	0.29	0.55	0.55		0.12	0.71	
Clearance Time (s)		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	
Lane Grp Cap (vph)		272	263		232	459	344	1925		219	2495	
v/s Ratio Prot			0.01			0.03		c0.25		c0.07	0.24	
v/s Ratio Perm		0.05			c0.12		0.16					
v/c Ratio		0.29	0.07		0.70	0.09	0.29	0.46		0.56	0.34	
Uniform Delay, d1		40.1	38.7		43.2	28.5	13.3	15.0		45.4	6.1	
Progression Factor		1.00	1.00		1.00	1.00	0.39	0.46		1.00	1.00	
Incremental Delay, d2		0.6	0.1		8.8	0.1	1.9	0.7		3.1	0.4	
Delay (s)		40.7	38.8		52.1	28.6	7.1	7.7		48.4	6.5	
Level of Service		D	D		D	C	A	A		D	A	
Approach Delay (s)		39.6			40.8			7.6			11.8	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

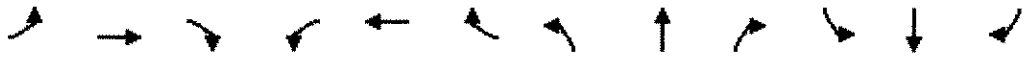
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.88		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1829			1627		1770	3515		1770	3516	
Flt Permitted	0.40	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	746	1829			1615		1770	3515		1770	3516	
Volume (vph)	30	40	5	5	5	130	20	730	35	105	775	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	44	6	6	6	144	22	811	39	117	861	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	33	50	0	0	156	0	22	850	0	117	900	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	15.4	15.4			15.4		3.4	61.5		11.9	70.0	
Effective Green, g (s)	16.4	16.4			16.4		4.4	62.5		12.9	71.0	
Actuated g/C Ratio	0.15	0.15			0.15		0.04	0.57		0.12	0.65	
Clearance Time (s)	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	
Lane Grp Cap (vph)	111	273			241		71	1997		208	2269	
v/s Ratio Prot		0.03					0.01	c0.24		c0.07	0.26	
v/s Ratio Perm	0.04				c0.10							
v/c Ratio	0.30	0.18			0.65		0.31	0.43		0.56	0.40	
Uniform Delay, d1	41.7	40.9			44.1		51.3	13.5		45.9	9.3	
Progression Factor	1.00	1.00			1.00		1.13	0.65		1.18	0.73	
Incremental Delay, d2	1.5	0.3			5.9		2.2	0.6		3.3	0.5	
Delay (s)	43.2	41.3			49.9		60.2	9.3		57.3	7.2	
Level of Service	D	D			D		E	A		E	A	
Approach Delay (s)		42.0			49.9			10.6			13.0	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	54.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frt		0.99			0.94			0.99		1.00	0.99	
Flt Protected		0.97			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1744			1656			3376		1711	3380	
Flt Permitted		0.64			0.83			1.00		0.95	1.00	
Satd. Flow (perm)		1148			1402			3376		1711	3380	
Volume (vph)	60	50	5	75	40	105	0	625	60	105	625	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	56	6	83	44	117	0	694	67	117	694	61
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	129	0	0	244	0	0	761	0	117	755	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		22.3			22.3			54.9		11.6	71.5	
Effective Green, g (s)		23.3			23.3			55.9		12.6	72.5	
Actuated g/C Ratio		0.21			0.21			0.51		0.11	0.66	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		243			297			1716		196	2228	
v/s Ratio Prot								c0.23		c0.07	0.22	
v/s Ratio Perm		0.11			c0.17							
v/c Ratio		0.53			0.82			0.44		0.60	0.34	
Uniform Delay, d1		38.5			41.4			17.2		46.3	8.2	
Progression Factor		1.00			1.00			0.24		1.40	0.39	
Incremental Delay, d2		2.2			16.5			0.7		4.6	0.4	
Delay (s)		40.7			57.8			4.8		69.2	3.6	
Level of Service		D			E			A		E	A	
Approach Delay (s)		40.7			57.8			4.8			12.4	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	49.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.98			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		1.00	1.00		0.99	
Satd. Flow (prot)		1825			1842	1583		1854	1583		1828	
Flt Permitted		0.99			0.88	1.00		0.97	1.00		0.88	
Satd. Flow (perm)		1808			1641	1583		1798	1583		1634	
Volume (vph)	5	175	30	85	290	30	10	95	70	60	160	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	194	33	94	322	33	11	106	78	67	178	11
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	59	0	0	0
Lane Group Flow (vph)	0	233	0	0	416	16	0	117	19	0	256	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		22.8			22.8	22.8		11.0	11.0		11.0	
Effective Green, g (s)		23.8			23.8	23.8		12.0	12.0		12.0	
Actuated g/C Ratio		0.49			0.49	0.49		0.25	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)		885			804	775		444	391		403	
v/s Ratio Prot												
v/s Ratio Perm		0.13			c0.25	0.01		0.07	0.01		c0.16	
v/c Ratio		0.26			0.52	0.02		0.26	0.05		0.64	
Uniform Delay, d1		7.3			8.5	6.4		14.7	14.0		16.3	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.2			0.6	0.0		0.3	0.1		3.3	
Delay (s)		7.4			9.0	6.4		15.1	14.0		19.6	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		7.4			8.8			14.6			19.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

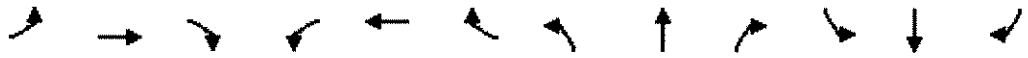
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.96		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	3393		1770	3539	1764	
Flt Permitted	1.00		0.20	1.00	0.96	
Satd. Flow (perm)	3393		376	3539	1764	
Volume (vph)	660	250	20	725	445	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	733	278	22	806	494	33
RTOR Reduction (vph)	25	0	0	0	2	0
Lane Group Flow (vph)	986	0	22	806	525	0
Turn Type	Prot		Perm			
Protected Phases	2			6	8	
Permitted Phases			6			
Actuated Green, G (s)	58.6		58.6	58.6	35.2	
Effective Green, g (s)	59.6		59.6	59.6	36.2	
Actuated g/C Ratio	0.54		0.54	0.54	0.33	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1838		204	1917	581	
v/s Ratio Prot	c0.29			0.23	c0.30	
v/s Ratio Perm			0.06			
v/c Ratio	0.54		0.11	0.42	0.90	
Uniform Delay, d1	16.3		12.3	15.0	35.2	
Progression Factor	1.00		1.22	1.21	1.00	
Incremental Delay, d2	1.1		1.0	0.6	17.4	
Delay (s)	17.4		15.9	18.7	52.6	
Level of Service	B		B	B	D	
Approach Delay (s)	17.4			18.7	52.6	
Approach LOS	B			B	D	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	1.00	1.00	0.88
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3295		1711	1863	1801	2787
Flt Permitted	0.96		0.23	1.00	1.00	1.00
Satd. Flow (perm)	3295		415	1863	1801	2787
Volume (vph)	495	50	15	405	570	720
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	550	56	17	450	633	800
RTOR Reduction (vph)	5	0	0	0	0	0
Lane Group Flow (vph)	601	0	17	450	633	800
Turn Type			Perm			Perm
Protected Phases	2			4	8	
Permitted Phases			4			8
Actuated Green, G (s)	52.8		71.0	71.0	71.0	71.0
Effective Green, g (s)	53.8		72.0	72.0	72.0	72.0
Actuated g/C Ratio	0.38		0.51	0.51	0.51	0.51
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1266		213	958	926	1433
v/s Ratio Prot	c0.18			0.24	c0.35	
v/s Ratio Perm			0.04			0.29
v/c Ratio	0.47		0.08	0.47	0.68	0.56
Uniform Delay, d1	32.5		17.2	21.8	25.5	23.2
Progression Factor	0.74		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2		0.7	1.7	2.1	0.5
Delay (s)	25.3		18.0	23.4	27.6	23.6
Level of Service	C		B	C	C	C
Approach Delay (s)	25.3			23.2	25.4	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



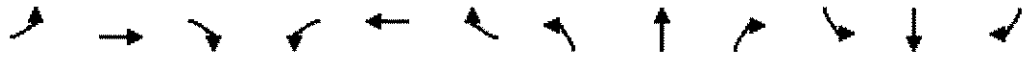
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.91			0.98		1.00	0.98	
Flt Protected		0.99			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		1924			1805			1935		1711	1764	
Flt Permitted		0.72			0.97			0.94		0.60	1.00	
Satd. Flow (perm)		1398			1751			1833		1078	1764	
Volume (vph)	40	85	20	25	75	185	15	95	20	180	255	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	94	22	28	83	206	17	106	22	200	283	44
RTOR Reduction (vph)	0	9	0	0	98	0	0	8	0	0	6	0
Lane Group Flow (vph)	0	151	0	0	219	0	0	137	0	200	321	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.8			8.8			14.4		25.4	25.4	
Effective Green, g (s)		9.8			9.8			15.4		26.4	26.4	
Actuated g/C Ratio		0.21			0.21			0.33		0.56	0.56	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		293			367			603		703	995	
v/s Ratio Prot										0.04	c0.18	
v/s Ratio Perm		0.11			c0.13			0.07		0.12		
v/c Ratio		0.52			0.60			0.23		0.28	0.32	
Uniform Delay, d1		16.4			16.7			11.4		5.4	5.4	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.5			2.6			0.2		0.2	0.2	
Delay (s)		17.9			19.3			11.6		5.6	5.6	
Level of Service		B			B			B		A	A	
Approach Delay (s)		17.9			19.3			11.6			5.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	46.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.96	0.95	1.00
Satd. Flow (prot)	1863	1583	1681	1703	1770	2787
Flt Permitted	1.00	1.00	0.95	0.44	0.95	1.00
Satd. Flow (perm)	1863	1583	1681	771	1770	2787
Volume (vph)	160	350	655	80	165	385
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	178	389	728	89	183	428
RTOR Reduction (vph)	0	177	0	0	0	139
Lane Group Flow (vph)	178	212	398	419	183	289
Turn Type		pm+ov	Prot			custom
Protected Phases	4	2	3	8	2	2 3
Permitted Phases		4				2
Actuated Green, G (s)	30.3	73.1	45.7	81.0	42.8	93.5
Effective Green, g (s)	31.3	75.1	46.7	82.0	43.8	94.5
Actuated g/C Ratio	0.22	0.54	0.33	0.59	0.31	0.68
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	417	849	561	762	554	1881
v/s Ratio Prot	0.10	0.08	c0.24	0.18	c0.10	0.10
v/s Ratio Perm		0.06		c0.14		
v/c Ratio	0.43	0.25	0.71	0.55	0.33	0.15
Uniform Delay, d1	46.7	17.4	40.7	17.7	36.9	8.2
Progression Factor	1.00	1.00	0.47	0.47	0.73	4.53
Incremental Delay, d2	0.7	0.2	3.5	0.7	1.6	0.0
Delay (s)	47.4	17.5	22.8	9.0	28.5	37.4
Level of Service	D	B	C	A	C	D
Approach Delay (s)	26.9			15.8	34.7	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.88			0.97		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1630			1752		1770	3477		1770	3536	
Flt Permitted		0.97			0.51		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1587			928		1770	3477		1770	3536	
Volume (vph)	10	0	80	45	10	15	10	525	70	15	985	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	0	89	50	11	17	11	583	78	17	1094	6
RTOR Reduction (vph)	0	80	0	0	8	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	70	0	11	658	0	17	1100	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		12.4			12.4		3.2	103.1		3.3	103.2	
Effective Green, g (s)		13.4			13.4		4.2	104.1		4.3	104.2	
Actuated g/C Ratio		0.10			0.10		0.03	0.74		0.03	0.74	
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)		152			89		53	2585		54	2632	
v/s Ratio Prot							0.01	0.19		c0.01	c0.31	
v/s Ratio Perm		0.01			c0.08							
v/c Ratio		0.13			0.78		0.21	0.25		0.31	0.42	
Uniform Delay, d1		58.0			61.9		66.3	5.7		66.4	6.6	
Progression Factor		1.00			0.93		0.98	0.47		1.32	0.49	
Incremental Delay, d2		0.4			31.3		1.8	0.2		2.7	0.4	
Delay (s)		58.3			88.7		67.1	2.9		90.1	3.6	
Level of Service		E			F		E	A		F	A	
Approach Delay (s)		58.3			88.7			3.9			4.9	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↱		↰	↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.97			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1772			1816		1770	3533		1770	3515	
Flt Permitted		0.77			0.86		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1391			1574		1770	3533		1770	3515	
Volume (vph)	110	140	80	25	90	15	75	485	5	10	1050	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	156	89	28	100	17	83	539	6	11	1167	56
RTOR Reduction (vph)	0	9	0	0	4	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	358	0	0	141	0	83	545	0	11	1221	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		37.6			37.6		11.0	78.0		3.2	70.2	
Effective Green, g (s)		38.6			38.6		12.0	79.0		4.2	71.2	
Actuated g/C Ratio		0.28			0.28		0.09	0.56		0.03	0.51	
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)		384			434		152	1994		53	1788	
v/s Ratio Prot							c0.05	0.15		0.01	c0.35	
v/s Ratio Perm		c0.26			0.09							
v/c Ratio		0.93			0.33		0.55	0.27		0.21	0.68	
Uniform Delay, d1		49.4			40.3		61.4	15.7		66.3	25.9	
Progression Factor		1.00			1.00		0.98	1.33		1.39	0.33	
Incremental Delay, d2		29.4			0.4		3.9	0.3		1.8	2.0	
Delay (s)		78.8			40.8		63.7	21.3		93.8	10.6	
Level of Service		E			D		E	C		F	B	
Approach Delay (s)		78.8			40.8			26.9			11.3	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	72.3%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00		1.00	0.97		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1792	1583		1797		1770	3445		1770	3514	
Flt Permitted		0.67	1.00		0.65		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1257	1583		1196		1770	3445		1770	3514	
Volume (vph)	75	20	130	95	50	5	105	485	105	5	1090	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	22	144	106	56	6	117	539	117	6	1211	61
RTOR Reduction (vph)	0	0	120	0	1	0	0	8	0	0	2	0
Lane Group Flow (vph)	0	105	24	0	167	0	117	648	0	6	1270	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		22.6	22.6		22.6		13.3	94.6		1.6	82.9	
Effective Green, g (s)		23.6	23.6		23.6		14.3	95.6		2.6	83.9	
Actuated g/C Ratio		0.17	0.17		0.17		0.10	0.68		0.02	0.60	
Clearance Time (s)		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	
Lane Grp Cap (vph)		212	267		202		181	2352		33	2106	
v/s Ratio Prot							c0.07	0.19		0.00	c0.36	
v/s Ratio Perm		0.08	0.02		c0.14							
v/c Ratio		0.50	0.09		0.83		0.65	0.28		0.18	0.60	
Uniform Delay, d1		52.8	49.1		56.2		60.4	8.7		67.7	17.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.30	0.22	
Incremental Delay, d2		1.8	0.1		23.4		7.7	0.3		1.9	0.9	
Delay (s)		54.6	49.3		79.6		68.1	9.0		90.2	4.9	
Level of Service		D	D		E		E	A		F	A	
Approach Delay (s)		51.5			79.6			17.9			5.3	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	125	85	50	165	15	5	155	25	20	240	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	139	94	56	183	17	6	172	28	22	267	11

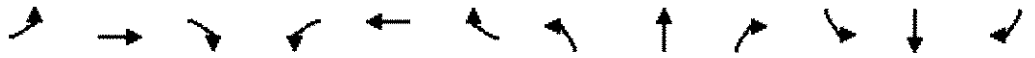
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	239	256	206	300
Volume Left (vph)	6	56	6	22
Volume Right (vph)	94	17	28	11
Hadj (s)	-0.20	0.04	-0.04	0.03
Departure Headway (s)	5.7	5.9	5.9	5.8
Degree Utilization, x	0.38	0.42	0.34	0.48
Capacity (veh/h)	566	554	540	573
Control Delay (s)	12.2	13.1	11.9	14.1
Approach Delay (s)	12.2	13.1	11.9	14.1
Approach LOS	B	B	B	B

Intersection Summary			
Delay	12.9		
HCM Level of Service	B		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	130	40	50	125	5	60	175	55	15	350	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	144	44	56	139	6	67	194	61	17	389	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	194	200	322	417
Volume Left (vph)	6	56	67	17
Volume Right (vph)	44	6	61	11
Hadj (s)	-0.10	0.07	-0.04	0.03
Departure Headway (s)	6.6	6.7	6.0	5.9
Degree Utilization, x	0.35	0.37	0.54	0.69
Capacity (veh/h)	472	464	553	573
Control Delay (s)	13.1	13.6	15.9	20.8
Approach Delay (s)	13.1	13.6	15.9	20.8
Approach LOS	B	B	C	C

Intersection Summary			
Delay	16.8		
HCM Level of Service	C		
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	95	5	10	110	110	5	20	15	140	50	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	106	6	11	122	122	6	22	17	156	56	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	117	256	44	217
Volume Left (vph)	6	11	6	156
Volume Right (vph)	6	122	17	6
Hadj (s)	0.01	-0.24	-0.17	0.16
Departure Headway (s)	4.9	4.5	4.9	5.0
Degree Utilization, x	0.16	0.32	0.06	0.30
Capacity (veh/h)	676	754	654	671
Control Delay (s)	8.8	9.6	8.3	10.2
Approach Delay (s)	8.8	9.6	8.3	10.2
Approach LOS	A	A	A	B

Intersection Summary			
Delay	9.6		
HCM Level of Service	A		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	20	25	5	30	15	910	50	45	1270	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	22	28	6	33	17	1011	56	50	1411	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1247	
pX, platoon unblocked												
vC, conflicting volume	2092	2617	711	1903	2594	533	1422			1067		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2092	2617	711	1903	2594	533	1422			1067		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	46	74	94	4	75	93	96			92		
cM capacity (veh/h)	21	21	375	29	22	491	475			649		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	39	67	522	561	756	717
Volume Left	11	28	17	0	50	0
Volume Right	22	33	0	56	0	11
cSH	45	52	475	1700	649	1700
Volume to Capacity	0.86	1.28	0.04	0.33	0.08	0.42
Queue Length 95th (ft)	86	150	3	0	6	0
Control Delay (s)	229.8	347.0	1.0	0.0	2.1	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	229.8	347.0	0.5		1.1	
Approach LOS	F	F				

Intersection Summary			
Average Delay	12.8		
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	35	50	890	15	70	1255
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	56	989	17	78	1394
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked						
vC, conflicting volume	1850	503			1006	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1850	503			1006	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	33	89			89	
cM capacity (veh/h)	58	514			685	

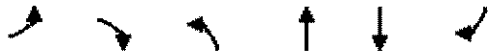
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	94	659	346	543	930
Volume Left	39	0	0	78	0
Volume Right	56	0	17	0	0
cSH	122	1700	1700	685	1700
Volume to Capacity	0.77	0.39	0.20	0.11	0.55
Queue Length 95th (ft)	112	0	0	10	0
Control Delay (s)	97.2	0.0	0.0	3.0	0.0
Lane LOS	F			A	
Approach Delay (s)	97.2	0.0		1.1	
Approach LOS	F				

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	45	70	360	10	75	505
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	78	400	11	83	561
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.73					
vC, conflicting volume	1133	406			411	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1182	406			411	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	65	88			93	
cM capacity (veh/h)	143	645			1148	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	128	411	644
Volume Left	50	0	83
Volume Right	78	11	0
cSH	271	1700	1148
Volume to Capacity	0.47	0.24	0.07
Queue Length 95th (ft)	59	0	6
Control Delay (s)	29.6	0.0	1.9
Lane LOS	D		A
Approach Delay (s)	29.6	0.0	1.9
Approach LOS	D		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	70	15	10	280	485	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	17	11	311	539	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.77	0.77	0.77			
vC, conflicting volume	906	572	606			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	877	443	486			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	96	99			
cM capacity (veh/h)	241	472	827			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	94	322	606
Volume Left	78	11	0
Volume Right	17	0	67
cSH	264	827	1700
Volume to Capacity	0.36	0.01	0.36
Queue Length 95th (ft)	39	1	0
Control Delay (s)	26.0	0.5	0.0
Lane LOS	D	A	
Approach Delay (s)	26.0	0.5	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

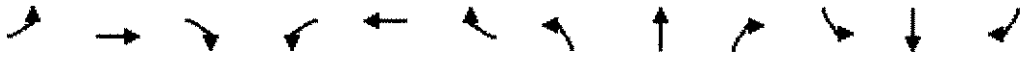
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			1.00			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1839		1770	1785			1965			1761	
Flt Permitted	0.25	1.00		0.35	1.00			0.90			0.94	
Satd. Flow (perm)	453	1839		654	1785			1776			1669	
Volume (vph)	60	375	35	60	470	30	50	230	5	35	245	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	417	39	67	522	33	56	256	6	39	272	44
RTOR Reduction (vph)	0	5	0	0	3	0	0	1	0	0	5	0
Lane Group Flow (vph)	67	451	0	67	552	0	0	317	0	0	350	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	21.0	21.0		21.0	21.0			17.3			17.3	
Effective Green, g (s)	22.0	22.0		22.0	22.0			18.3			18.3	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.34			0.34	
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)	188	762		271	740			612			575	
v/s Ratio Prot		0.25			c0.31							
v/s Ratio Perm	0.15			0.10				0.18			c0.21	
v/c Ratio	0.36	0.59		0.25	0.75			0.52			0.61	
Uniform Delay, d1	10.7	12.1		10.1	13.2			13.9			14.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	1.2		0.5	4.1			0.7			1.8	
Delay (s)	11.8	13.3		10.6	17.3			14.6			16.3	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		13.1			16.6			14.6			16.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

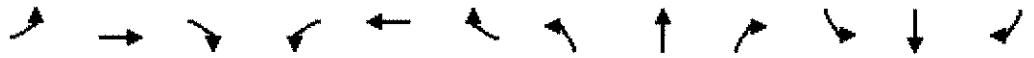
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1882		1652	1779				
Flt Permitted	0.31	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	621	1739			1882		1652	1779				
Volume (vph)	40	455	0	0	510	40	65	230	20	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	506	0	0	567	44	72	256	22	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	3	0	0	0	0
Lane Group Flow (vph)	44	506	0	0	608	0	72	275	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	25.4	25.4			25.4		10.7	10.7				
Effective Green, g (s)	26.4	26.4			26.4		11.7	11.7				
Actuated g/C Ratio	0.54	0.54			0.54		0.24	0.24				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	338	947			1024		399	429				
v/s Ratio Prot		0.29			c0.32			c0.15				
v/s Ratio Perm	0.07						0.04					
v/c Ratio	0.13	0.53			0.59		0.18	0.64				
Uniform Delay, d1	5.4	7.1			7.4		14.6	16.5				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.2	0.6			0.9		0.2	3.3				
Delay (s)	5.6	7.7			8.4		14.8	19.8				
Level of Service	A	A			A		B	B				
Approach Delay (s)		7.5			8.4			18.8			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



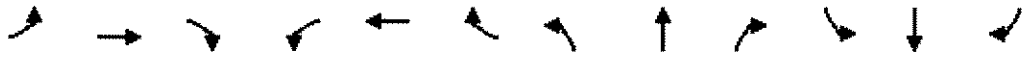
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1659		1711	1801	1531		1583		1652	1739	1583
Flt Permitted	0.42	1.00		0.51	1.00	1.00		0.40		0.86	1.00	1.00
Satd. Flow (perm)	683	1659		913	1801	1531		635		1502	1739	1583
Volume (vph)	110	260	20	70	350	165	5	35	25	225	280	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	289	22	78	389	183	6	39	28	250	311	100
RTOR Reduction (vph)	0	3	0	0	0	108	0	24	0	0	0	66
Lane Group Flow (vph)	122	308	0	78	389	75	0	49	0	250	311	34
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	21.0	21.0		20.7	20.7	20.7		4.8		16.8	16.8	16.8
Effective Green, g (s)	22.0	22.0		21.7	21.7	21.7		5.8		17.8	17.8	17.8
Actuated g/C Ratio	0.42	0.42		0.41	0.41	0.41		0.11		0.34	0.34	0.34
Clearance Time (s)	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
Lane Grp Cap (vph)	285	691		375	740	629		70		529	586	534
v/s Ratio Prot		0.19			c0.22					0.07	c0.18	
v/s Ratio Perm	0.18			0.09		0.05		c0.08		0.09		0.02
v/c Ratio	0.43	0.45		0.21	0.53	0.12		0.70		0.47	0.53	0.06
Uniform Delay, d1	10.9	11.0		10.0	11.7	9.6		22.7		14.2	14.1	11.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.5		0.3	0.7	0.1		26.3		0.7	0.9	0.0
Delay (s)	12.0	11.5		10.3	12.4	9.7		48.9		14.9	15.1	11.9
Level of Service	B	B		B	B	A		D		B	B	B
Approach Delay (s)		11.6			11.4			48.9			14.5	
Approach LOS		B			B			D			B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1735	1478	1486	1525			1823	1794	1593	1829	
Flt Permitted		0.98	1.00	0.59	1.00			0.82	1.00	0.65	1.00	
Satd. Flow (perm)		1700	1478	923	1525			1526	1794	1093	1829	
Volume (vph)	10	220	85	55	320	65	65	85	60	105	110	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	244	94	61	356	72	72	94	67	117	122	17
RTOR Reduction (vph)	0	0	49	0	9	0	0	0	41	0	5	0
Lane Group Flow (vph)	0	255	45	61	419	0	0	166	26	117	134	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		17.4	17.4	17.4	17.4			12.4	12.4	12.4	12.4	
Effective Green, g (s)		18.4	18.4	18.4	18.4			13.4	13.4	13.4	13.4	
Actuated g/C Ratio		0.41	0.41	0.41	0.41			0.30	0.30	0.30	0.30	
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)		698	607	379	626			456	537	327	547	
v/s Ratio Prot					c0.27						0.07	
v/s Ratio Perm		0.15	0.03	0.07				c0.11	0.01	0.11		
v/c Ratio		0.37	0.07	0.16	0.67			0.36	0.05	0.36	0.25	
Uniform Delay, d1		9.2	8.0	8.3	10.7			12.3	11.2	12.3	11.9	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.1	0.2	2.7			0.5	0.0	0.7	0.2	
Delay (s)		9.5	8.1	8.5	13.5			12.8	11.2	13.0	12.1	
Level of Service		A	A	A	B			B	B	B	B	
Approach Delay (s)		9.1			12.8			12.4			12.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

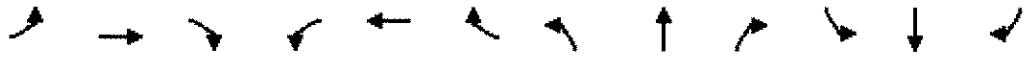


Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			1.00			0.99	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1794			1926			1852			2092	
Flt Permitted		0.94			0.89			0.97			0.99	
Satd. Flow (perm)		1708			1747			1811			2081	
Volume (vph)	15	45	15	20	30	5	15	240	5	5	240	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	17	22	33	6	17	267	6	6	267	17
RTOR Reduction (vph)	0	11	0	0	0	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	73	0	0	61	0	0	289	0	0	287	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		342			349			702			806	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			c0.16			0.14	
v/c Ratio		0.21			0.17			0.41			0.36	
Uniform Delay, d1		26.7			26.5			17.9			17.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.1			1.8			1.2	
Delay (s)		28.2			27.6			19.6			18.6	
Level of Service		C			C			B			B	
Approach Delay (s)		28.2			27.6			19.6			18.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.95		
Satd. Flow (prot)	1888	1884		
Flt Permitted	0.95	0.95		
Satd. Flow (perm)	1888	1884		
Volume (vph)	15	340	10	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	378	11	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	394	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	495		
v/s Ratio Prot	0.01	c0.21		
v/s Ratio Perm				
v/c Ratio	0.03	0.80		
Uniform Delay, d1	22.0	27.5		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	12.5		
Delay (s)	22.1	40.0		
Level of Service	C	D		
Approach Delay (s)		39.3		
Approach LOS		D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1583		1814	1583	1770	3534		1770	3498	
Flt Permitted		0.74	1.00		0.80	1.00	0.19	1.00		0.25	1.00	
Satd. Flow (perm)		1386	1583		1496	1583	358	3534		470	3498	
Volume (vph)	55	20	150	30	25	35	135	1005	10	30	835	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	22	167	33	28	39	150	1117	11	33	928	78
RTOR Reduction (vph)	0	0	143	0	0	33	0	1	0	0	8	0
Lane Group Flow (vph)	0	83	24	0	61	6	150	1127	0	33	998	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		8.3	8.3		8.3	8.3	41.9	41.9		30.9	30.9	
Effective Green, g (s)		8.3	8.3		8.3	8.3	41.9	41.9		30.9	30.9	
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.72	0.72		0.53	0.53	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		198	226		213	226	428	2544		250	1857	
v/s Ratio Prot							0.04	c0.32			c0.29	
v/s Ratio Perm		c0.06	0.02		0.04	0.00	0.21			0.07		
v/c Ratio		0.42	0.11		0.29	0.02	0.35	0.44		0.13	0.54	
Uniform Delay, d1		22.8	21.7		22.3	21.5	4.0	3.4		6.9	9.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4	0.2		0.7	0.0	0.5	0.1		0.2	0.3	
Delay (s)		24.2	21.9		23.0	21.5	4.5	3.5		7.1	9.3	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		22.7			22.4			3.6			9.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1747	1478	1770	1909		1652	3297		1652	3292	
Flt Permitted		0.78	1.00	0.71	1.00		0.24	1.00		0.95	1.00	
Satd. Flow (perm)		1400	1478	1323	1909		409	3297		1652	3292	
Volume (vph)	40	25	185	30	20	35	190	1195	15	40	880	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	28	206	33	22	39	211	1328	17	44	978	22
RTOR Reduction (vph)	0	0	182	0	35	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	72	24	33	26	0	211	1344	0	44	998	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.9	7.9	7.9	7.9		41.5	41.5		3.6	28.3	
Effective Green, g (s)		7.9	7.9	7.9	7.9		42.5	42.5		3.6	29.3	
Actuated g/C Ratio		0.12	0.12	0.12	0.12		0.62	0.62		0.05	0.43	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		161	170	153	220		559	2046		87	1408	
v/s Ratio Prot					0.01		0.09	c0.41		0.03	c0.30	
v/s Ratio Perm		c0.05	0.02	0.02			0.14					
v/c Ratio		0.45	0.14	0.22	0.12		0.38	0.66		0.51	0.71	
Uniform Delay, d1		28.3	27.2	27.5	27.2		11.7	8.3		31.6	16.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.1	0.3	0.1		1.9	1.7		1.7	3.0	
Delay (s)		29.0	27.4	27.7	27.3		13.6	10.0		33.3	19.1	
Level of Service		C	C	C	C		B	A		C	B	
Approach Delay (s)		27.8			27.4			10.5			19.7	
Approach LOS		C			C			B			B	

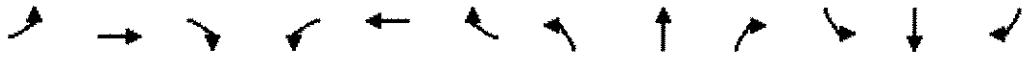
Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1699			3539			3537	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1699			3539			3537	
Volume (vph)	0	0	0	1445	140	0	0	765	0	0	1405	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1606	156	0	0	850	0	0	1561	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	858	904	0	0	850	0	0	1566	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			30.0			30.0	
Effective Green, g (s)				30.0	30.0			32.0			32.0	
Actuated g/C Ratio				0.43	0.43			0.46			0.46	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				720	728			1618			1617	
v/s Ratio Prot								0.24			c0.44	
v/s Ratio Perm				0.51	0.53							
v/c Ratio				1.19	1.24			0.53			0.97	
Uniform Delay, d1				20.0	20.0			13.6			18.5	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				99.7	120.3			0.3			15.4	
Delay (s)				119.7	140.3			13.9			33.9	
Level of Service				F	F			B			C	
Approach Delay (s)		0.0			130.3			13.9			33.9	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	70.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.4%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	135	60	75	110	15	20	275	65	55	265	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	150	67	83	122	17	22	306	72	61	294	28

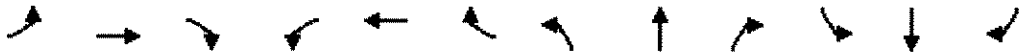
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	239	222	400	383
Volume Left (vph)	22	83	22	61
Volume Right (vph)	67	17	72	28
Hadj (s)	-0.11	0.06	-0.06	0.02
Departure Headway (s)	7.1	7.3	6.5	6.6
Degree Utilization, x	0.47	0.45	0.72	0.70
Capacity (veh/h)	443	429	530	515
Control Delay (s)	16.1	16.1	24.2	23.5
Approach Delay (s)	16.1	16.1	24.2	23.5
Approach LOS	C	C	C	C

Intersection Summary			
Delay	21.0		
HCM Level of Service	C		
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	150	5	355	190	5	595
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	167	6	394	211	6	661
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.94					
vC, conflicting volume	1172	500			606	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1182	500			606	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	15	99			99	
cM capacity (veh/h)	197	571			972	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	172	606	667
Volume Left	167	0	6
Volume Right	6	211	0
cSH	201	1700	972
Volume to Capacity	0.86	0.36	0.01
Queue Length 95th (ft)	161	0	0
Control Delay (s)	79.9	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	79.9	0.0	0.2
Approach LOS	F		

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↕			↕↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	0	60	10	0	10	65	980	5	5	885	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	0	67	11	0	11	72	1089	6	6	983	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1711	2250	508	1806	2264	547	1017			1094		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1711	2250	508	1806	2264	547	1017			1094		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	25	100	87	72	100	98	89			99		
cM capacity (veh/h)	52	36	510	39	36	481	678			633		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	106	22	617	550	497	525
Volume Left	39	11	72	0	6	0
Volume Right	67	11	0	6	0	33
cSH	120	73	678	1700	633	1700
Volume to Capacity	0.88	0.31	0.11	0.32	0.01	0.31
Queue Length 95th (ft)	136	28	9	0	1	0
Control Delay (s)	119.2	74.9	2.8	0.0	0.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	119.2	74.9	1.5		0.1	
Approach LOS	F	F				

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	155	25	40	170	35	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	172	28	44	189	39	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			200		464	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200		464	186
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	91
cM capacity (veh/h)			1372		538	856

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	200	233	117
Volume Left	0	44	39
Volume Right	28	0	78
cSH	1700	1372	715
Volume to Capacity	0.12	0.03	0.16
Queue Length 95th (ft)	0	3	15
Control Delay (s)	0.0	1.7	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	11.0
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD ALT1*
Analysis Time Period	*PM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *LOCUST/LEDGE*	North/South Street: *ROUTE 7*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*575*	*310*	*35*	*695*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*638*	*344*	*38*	*772*	*11*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*55*	*0*	*30*	*75*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*61*	*0*	*33*	*83*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*38*			*61*			*116*
C (m) (vph)		*699*			*523*			*157*
v/c		*0.05*			*0.12*			*0.74*
95% queue length		*0.17*			*0.39*			*4.51*
Control Delay		*10.4*			*12.8*			*74.4*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*12.8*			*74.4*		
Approach LOS	--	--	*B*			*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD ALT1*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*495*	*0*	*0*	*740*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*550*	*0*	*0*	*822*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

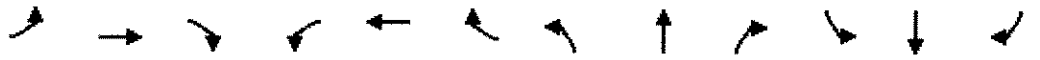
Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*160*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*177*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*88*				*177*			
C (m) (vph)	*807*				*96*			
v/c	*0.11*				*1.84*			
95% queue length	*0.37*				*14.65*			
Control Delay	*10.0*				*491.5*			
LOS	*B*				*F*			
Approach Delay	--	--	*491.5*					
Approach LOS	--	--	*F*					

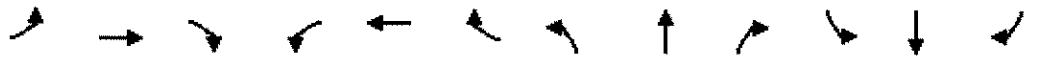
NULL ALTERNATIVE

2008 AM PEAK HOUR



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1823	1583		1821	1583	1770	3513		1770	3531	
Flt Permitted		0.81	1.00		0.83	1.00	0.24	1.00		0.95	1.00	
Satd. Flow (perm)		1514	1583		1554	1583	452	3513		1770	3531	
Volume (vph)	15	20	45	55	65	100	60	750	40	100	1035	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	22	50	61	72	111	67	833	44	111	1150	17
RTOR Reduction (vph)	0	0	44	0	0	85	0	0	0	0	0	0
Lane Group Flow (vph)	0	39	6	0	133	26	67	877	0	111	1167	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		15.6	15.6		15.6	28.8	80.5	80.5		13.2	98.7	
Effective Green, g (s)		16.6	16.6		16.6	30.8	81.5	81.5		14.2	99.7	
Actuated g/C Ratio		0.13	0.13		0.13	0.24	0.63	0.63		0.11	0.77	
Clearance Time (s)		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	
Lane Grp Cap (vph)		193	202		198	375	283	2202		193	2708	
v/s Ratio Prot			0.00			0.02		0.25		c0.06	c0.33	
v/s Ratio Perm		0.03			c0.09		0.15					
v/c Ratio		0.20	0.03		0.67	0.07	0.24	0.40		0.58	0.43	
Uniform Delay, d1		50.8	49.7		54.1	38.5	10.6	12.1		55.0	5.3	
Progression Factor		1.00	1.00		1.00	1.00	0.34	0.36		1.00	1.00	
Incremental Delay, d2		0.5	0.1		8.6	0.1	1.8	0.5		4.1	0.5	
Delay (s)		51.3	49.7		62.7	38.6	5.4	4.8		59.1	5.8	
Level of Service		D	D		E	D	A	A		E	A	
Approach Delay (s)		50.4			51.7			4.8			10.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.92		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583			1686		1770	3535		1770	3526	
Flt Permitted	0.43	1.00			0.90		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	794	1583			1547		1770	3535		1770	3526	
Volume (vph)	20	0	10	55	20	115	10	715	5	120	990	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	0	11	61	22	128	11	794	6	133	1100	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	11	0	0	211	0	11	800	0	133	1128	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	22.2	22.2			22.2		3.2	72.3		14.3	83.4	
Effective Green, g (s)	23.2	23.2			23.2		4.2	73.3		15.3	84.4	
Actuated g/C Ratio	0.18	0.18			0.18		0.03	0.56		0.12	0.65	
Clearance Time (s)	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	
Lane Grp Cap (vph)	142	283			276		57	1993		208	2289	
v/s Ratio Prot		0.01					0.01	0.23		c0.08	c0.32	
v/s Ratio Perm	0.03				c0.14							
v/c Ratio	0.15	0.04			0.76		0.19	0.40		0.64	0.49	
Uniform Delay, d1	45.1	44.2			50.8		61.2	16.0		54.7	11.8	
Progression Factor	1.00	1.00			1.00		1.25	0.39		1.23	0.76	
Incremental Delay, d2	0.5	0.1			11.9		1.5	0.6		5.9	0.7	
Delay (s)	45.6	44.2			62.7		78.0	6.8		72.9	9.7	
Level of Service	D	D			E		E	A		E	A	
Approach Delay (s)		45.2			62.7			7.7			16.3	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	62.7%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.91			0.98		1.00	0.98		1.00	0.99	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1629			1708		1711	3365		1711	3382	
Flt Permitted		0.98			0.70		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1601			1236		1711	3365		1711	3382	
Volume (vph)	5	20	55	115	40	30	5	645	80	85	895	75
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	22	61	128	44	33	6	717	89	94	994	83
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	89	0	0	205	0	6	806	0	94	1077	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		24.6			24.6		1.6	72.9		11.3	82.6	
Effective Green, g (s)		25.6			25.6		2.6	73.9		12.3	83.6	
Actuated g/C Ratio		0.20			0.20		0.02	0.57		0.09	0.64	
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)		315			243		34	1913		162	2175	
v/s Ratio Prot							0.00	0.24		c0.05	c0.32	
v/s Ratio Perm		0.06			c0.17							
v/c Ratio		0.28			0.84		0.18	0.42		0.58	0.50	
Uniform Delay, d1		44.4			50.3		62.6	15.9		56.4	12.1	
Progression Factor		1.00			1.00		1.00	1.00		1.36	0.26	
Incremental Delay, d2		0.5			22.5		2.5	0.7		4.7	0.7	
Delay (s)		44.9			72.8		65.1	16.6		81.2	3.9	
Level of Service		D			E		E	B		F	A	
Approach Delay (s)		44.9			72.8			17.0			10.1	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	60.8%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		1.00			1.00	0.85		1.00	0.85		0.97	
Flt Protected		0.99			1.00	1.00		0.98	1.00		0.99	
Satd. Flow (prot)		1833			1861	1583		1831	1583		1790	
Flt Permitted		0.87			0.99	1.00		0.84	1.00		0.89	
Satd. Flow (perm)		1611			1851	1583		1559	1583		1611	
Volume (vph)	50	145	5	5	265	45	55	105	5	45	120	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	161	6	6	294	50	61	117	6	50	133	50
RTOR Reduction (vph)	0	0	0	0	0	28	0	0	4	0	0	0
Lane Group Flow (vph)	0	223	0	0	300	22	0	178	2	0	233	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		17.2			17.2	17.2		9.7	9.7		9.7	
Effective Green, g (s)		18.2			18.2	18.2		10.7	10.7		10.7	
Actuated g/C Ratio		0.44			0.44	0.44		0.26	0.26		0.26	
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)		703			808	691		400	406		413	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.16	0.01		0.11	0.00		c0.14	
v/c Ratio		0.32			0.37	0.03		0.45	0.00		0.56	
Uniform Delay, d1		7.7			7.9	6.7		13.0	11.5		13.5	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.3			0.3	0.0		0.8	0.0		1.8	
Delay (s)		7.9			8.2	6.7		13.8	11.5		15.2	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		7.9			8.0			13.7			15.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.51	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	918	1863	1801	1583
Volume (vph)	45	120	85	245	230	190
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	133	94	272	256	211
RTOR Reduction (vph)	0	73	0	0	0	0
Lane Group Flow (vph)	50	60	94	272	256	211
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	30.8	30.8	23.0	23.0	23.0	23.0
Effective Green, g (s)	31.8	31.8	24.0	24.0	24.0	24.0
Actuated g/C Ratio	0.45	0.45	0.34	0.34	0.34	0.34
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)	777	719	315	639	617	543
v/s Ratio Prot	0.03	c0.04		c0.15	0.14	
v/s Ratio Perm			0.10			0.13
v/c Ratio	0.06	0.08	0.30	0.43	0.41	0.39
Uniform Delay, d1	10.7	10.8	16.8	17.7	17.6	17.4
Progression Factor	0.43	0.75	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	2.4	2.1	0.5	0.5
Delay (s)	4.8	8.3	19.2	19.8	18.1	17.9
Level of Service	A	A	B	B	B	B
Approach Delay (s)	7.3			19.6	18.0	
Approach LOS	A			B	B	

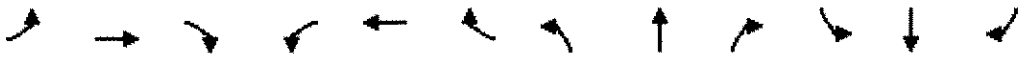
Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		1.00			0.93			0.99		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1948			1837			1973		1711	1759	
Flt Permitted		0.75			0.97			0.99		0.51	1.00	
Satd. Flow (perm)		1482			1792			1954		927	1759	
Volume (vph)	30	45	0	10	55	75	10	235	10	110	165	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	50	0	11	61	83	11	261	11	122	183	33
RTOR Reduction (vph)	0	0	0	0	66	0	0	2	0	0	5	0
Lane Group Flow (vph)	0	83	0	0	89	0	0	282	0	122	211	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.6			7.6			29.2		39.9	39.9	
Effective Green, g (s)		8.6			8.6			30.2		40.9	40.9	
Actuated g/C Ratio		0.14			0.14			0.50		0.68	0.68	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		211			255			977		715	1191	
v/s Ratio Prot										0.02	c0.12	
v/s Ratio Perm		c0.06			0.05			c0.14		0.10		
v/c Ratio		0.39			0.35			0.29		0.17	0.18	
Uniform Delay, d1		23.5			23.4			8.8		3.9	3.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.2			0.8			0.2		0.1	0.1	
Delay (s)		24.7			24.2			9.0		4.1	3.6	
Level of Service		C			C			A		A	A	
Approach Delay (s)		24.7			24.2			9.0			3.8	
Approach LOS		C			C			A			A	

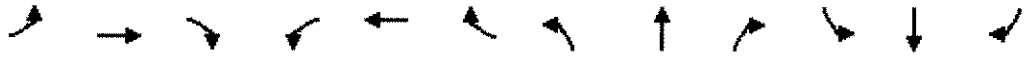
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↱		↰	↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.93			0.97		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1713			1760		1770	3527		1770	3501	
Flt Permitted		0.87			0.66		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1511			1187		1770	3527		1770	3501	
Volume (vph)	35	40	80	150	65	60	195	635	15	110	840	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	44	89	167	72	67	217	706	17	122	933	72
RTOR Reduction (vph)	0	29	0	0	8	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	143	0	0	298	0	217	722	0	122	1002	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		38.3			38.3		23.0	66.6		13.9	57.5	
Effective Green, g (s)		39.3			39.3		24.0	67.6		14.9	58.5	
Actuated g/C Ratio		0.28			0.28		0.17	0.48		0.11	0.42	
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)		424			333		303	1703		188	1463	
v/s Ratio Prot							c0.12	0.20		0.07	c0.29	
v/s Ratio Perm		0.09			c0.25							
v/c Ratio		0.34			0.90		0.72	0.42		0.65	0.68	
Uniform Delay, d1		40.0			48.4		54.8	23.5		60.0	33.2	
Progression Factor		1.00			1.49		0.93	1.03		1.00	1.00	
Incremental Delay, d2		0.5			24.0		7.5	0.7		7.5	1.3	
Delay (s)		40.5			95.8		58.5	25.0		67.5	34.6	
Level of Service		D			F		E	C		E	C	
Approach Delay (s)		40.5			95.8			32.7			38.1	
Approach LOS		D			F			C			D	

Intersection Summary			
HCM Average Control Delay	43.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	68.1%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.89			0.98		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1648			1790		1770	3533		1770	3532	
Flt Permitted		0.94			0.89		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1562			1611		1770	3533		1770	3532	
Volume (vph)	5	0	20	30	45	15	80	825	10	5	1050	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	22	33	50	17	89	917	11	6	1167	17
RTOR Reduction (vph)	0	20	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	8	0	0	95	0	89	928	0	6	1184	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		12.9			12.9		12.4	104.3		1.6	93.5	
Effective Green, g (s)		13.9			13.9		13.4	105.3		2.6	94.5	
Actuated g/C Ratio		0.10			0.10		0.10	0.75		0.02	0.68	
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)		155			160		169	2657		33	2384	
v/s Ratio Prot							c0.05	0.26		0.00	c0.34	
v/s Ratio Perm		0.01			c0.06							
v/c Ratio		0.05			0.59		0.53	0.35		0.18	0.50	
Uniform Delay, d1		57.1			60.3		60.3	5.8		67.7	11.1	
Progression Factor		1.00			0.99		0.91	1.08		1.31	1.12	
Incremental Delay, d2		0.1			5.7		2.8	0.3		1.9	0.5	
Delay (s)		57.2			65.6		57.7	6.6		90.7	13.0	
Level of Service		E			E		E	A		F	B	
Approach Delay (s)		57.2			65.6			11.1			13.4	
Approach LOS		E			E			B			B	

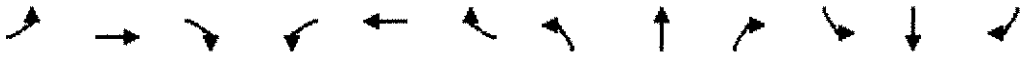
Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.97			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780			1808		1770	3536		1770	3517	
Flt Permitted		0.76			0.90		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1378			1642		1770	3536		1770	3517	
Volume (vph)	45	65	30	15	65	15	65	855	5	5	1050	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	72	33	17	72	17	72	950	6	6	1167	50
RTOR Reduction (vph)	0	8	0	0	5	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	147	0	0	101	0	72	956	0	6	1216	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		18.1			18.1		9.5	99.1		1.6	91.2	
Effective Green, g (s)		19.1			19.1		10.5	100.1		2.6	92.2	
Actuated g/C Ratio		0.14			0.14		0.08	0.71		0.02	0.66	
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)		188			224		133	2528		33	2316	
v/s Ratio Prot							c0.04	0.27		0.00	c0.35	
v/s Ratio Perm		c0.11			0.06							
v/c Ratio		0.78			0.45		0.54	0.38		0.18	0.52	
Uniform Delay, d1		58.4			55.6		62.4	7.8		67.7	12.5	
Progression Factor		1.00			1.00		0.91	1.42		1.41	0.09	
Incremental Delay, d2		18.9			1.4		4.1	0.4		2.4	0.8	
Delay (s)		77.3			57.1		61.2	11.5		98.1	1.9	
Level of Service		E			E		E	B		F	A	
Approach Delay (s)		77.3			57.1			15.0			2.4	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1827	1583		1766		1770	3513		1770	3520	
Flt Permitted		0.87	1.00		0.53		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1618	1583		969		1770	3513		1770	3520	
Volume (vph)	50	80	105	35	5	5	135	870	45	10	1045	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	89	117	39	6	6	150	967	50	11	1161	44
RTOR Reduction (vph)	0	0	84	0	3	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	145	33	0	48	0	150	1016	0	11	1204	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		17.4	17.4		17.4		16.3	98.2		3.2	85.1	
Effective Green, g (s)		18.4	18.4		18.4		17.3	99.2		4.2	86.1	
Actuated g/C Ratio		0.13	0.13		0.13		0.12	0.71		0.03	0.61	
Clearance Time (s)		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	
Lane Grp Cap (vph)		213	208		127		219	2489		53	2165	
v/s Ratio Prot							c0.08	0.29		0.01	c0.34	
v/s Ratio Perm		c0.09	0.02		0.05							
v/c Ratio		0.68	0.16		0.37		0.68	0.41		0.21	0.56	
Uniform Delay, d1		58.0	53.9		55.5		58.7	8.4		66.3	15.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.13	0.38	
Incremental Delay, d2		8.6	0.4		1.9		8.6	0.5		1.7	0.9	
Delay (s)		66.6	54.3		57.4		67.3	8.9		76.7	6.9	
Level of Service		E	D		E		E	A		E	A	
Approach Delay (s)		61.1			57.4			16.4			7.5	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	56.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	100	95	20	100	25	10	135	25	5	120	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	111	106	22	111	28	11	150	28	6	133	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	222	161	189	144
Volume Left (vph)	6	22	11	6
Volume Right (vph)	106	28	28	6
Hadj (s)	-0.25	-0.04	-0.04	0.02
Departure Headway (s)	4.8	5.0	5.0	5.2
Degree Utilization, x	0.29	0.23	0.26	0.21
Capacity (veh/h)	698	655	659	635
Control Delay (s)	9.7	9.5	9.8	9.5
Approach Delay (s)	9.7	9.5	9.8	9.5
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.7		
HCM Level of Service	A		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	55	55	55	130	5	60	160	40	10	195	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	61	61	61	144	6	67	178	44	11	217	33

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	128	211	289	261
Volume Left (vph)	6	61	67	11
Volume Right (vph)	61	6	44	33
Hadj (s)	-0.24	0.08	-0.01	-0.03
Departure Headway (s)	5.5	5.7	5.3	5.3
Degree Utilization, x	0.20	0.33	0.42	0.39
Capacity (veh/h)	566	576	630	630
Control Delay (s)	9.9	11.5	12.2	11.6
Approach Delay (s)	9.9	11.5	12.2	11.6
Approach LOS	A	B	B	B

Intersection Summary			
Delay	11.5		
HCM Level of Service	B		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	110	0	10	15	105	5	55	10	135	20	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	122	0	11	17	117	6	61	11	150	22	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	144	78	189
Volume Left (vph)	22	11	6	150
Volume Right (vph)	0	117	11	17
Hadj (s)	0.06	-0.44	-0.04	0.14
Departure Headway (s)	4.8	4.3	4.8	4.8
Degree Utilization, x	0.19	0.17	0.10	0.25
Capacity (veh/h)	698	772	693	699
Control Delay (s)	9.0	8.2	8.4	9.5
Approach Delay (s)	9.0	8.2	8.4	9.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay			8.9	
HCM Level of Service			A	
Intersection Capacity Utilization		34.3%	ICU Level of Service	A
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	15	80	5	35	20	280	30	15	335	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	17	89	6	39	22	311	33	17	372	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	822	797	375	800	783	328	378			344		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	822	797	375	800	783	328	378			344		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	98	98	69	98	95	98			99		
cM capacity (veh/h)	266	309	671	284	315	714	1181			1215		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	133	367	394
Volume Left	6	89	22	17
Volume Right	17	39	33	6
cSH	436	347	1181	1215
Volume to Capacity	0.06	0.38	0.02	0.01
Queue Length 95th (ft)	5	44	1	1
Control Delay (s)	13.8	21.7	0.7	0.5
Lane LOS	B	C	A	A
Approach Delay (s)	13.8	21.7	0.7	0.5
Approach LOS	B	C		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	70	60	255	35	50	350
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	67	283	39	56	389
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	803	303			322	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	784	235			256	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	91			95	
cM capacity (veh/h)	315	733			1193	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	144	322	444
Volume Left	78	0	56
Volume Right	67	39	0
cSH	427	1700	1193
Volume to Capacity	0.34	0.19	0.05
Queue Length 95th (ft)	37	0	4
Control Delay (s)	17.7	0.0	1.5
Lane LOS	C		A
Approach Delay (s)	17.7	0.0	1.5
Approach LOS	C		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	10	30	320	15	10	320
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	33	356	17	11	356
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.94					
vC, conflicting volume	742	364			372	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	726	364			372	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	95			99	
cM capacity (veh/h)	366	681			1186	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	44	372	367
Volume Left	11	0	11
Volume Right	33	17	0
cSH	560	1700	1186
Volume to Capacity	0.08	0.22	0.01
Queue Length 95th (ft)	6	0	1
Control Delay (s)	12.0	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	12.0	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	10	5	65	335	305	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	72	372	339	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked						
vC, conflicting volume	869	353	367			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	869	353	367			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	94			
cM capacity (veh/h)	303	691	1192			

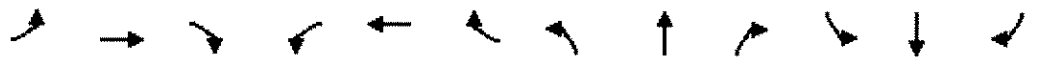
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	17	444	367
Volume Left	11	72	0
Volume Right	6	0	28
cSH	372	1192	1700
Volume to Capacity	0.04	0.06	0.22
Queue Length 95th (ft)	4	5	0
Control Delay (s)	15.1	1.9	0.0
Lane LOS	C	A	
Approach Delay (s)	15.1	1.9	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1828		1770	1787			1939			1729	
Flt Permitted	0.28	1.00		0.51	1.00			0.95			0.91	
Satd. Flow (perm)	499	1828		949	1787			1851			1595	
Volume (vph)	40	250	35	30	460	25	25	205	40	45	155	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	278	39	33	511	28	28	228	44	50	172	67
RTOR Reduction (vph)	0	6	0	0	2	0	0	5	0	0	10	0
Lane Group Flow (vph)	44	311	0	33	537	0	0	295	0	0	279	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	19.5	19.5		19.5	19.5			15.0			15.0	
Effective Green, g (s)	20.5	20.5		20.5	20.5			16.0			16.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.33			0.33	
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)	208	763		396	746			603			520	
v/s Ratio Prot		0.17			c0.30							
v/s Ratio Perm	0.09			0.03				0.16			c0.17	
v/c Ratio	0.21	0.41		0.08	0.72			0.49			0.54	
Uniform Delay, d1	9.1	10.0		8.6	11.9			13.3			13.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.4		0.1	3.3			0.6			1.1	
Delay (s)	9.6	10.4		8.7	15.2			13.9			14.6	
Level of Service	A	B		A	B			B			B	
Approach Delay (s)		10.3			14.9			13.9			14.6	
Approach LOS		B			B			B			B	

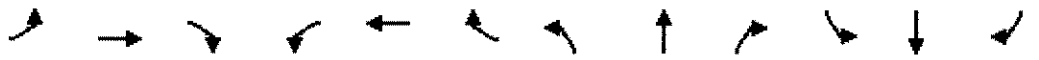
Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.96				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1871		1652	1735				
Flt Permitted	0.33	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	649	1739			1871		1652	1735				
Volume (vph)	15	270	0	0	475	60	100	170	55	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	300	0	0	528	67	111	189	61	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	12	0	0	0	0
Lane Group Flow (vph)	17	300	0	0	590	0	111	238	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	25.3	25.3			25.3		10.4	10.4				
Effective Green, g (s)	26.3	26.3			26.3		11.4	11.4				
Actuated g/C Ratio	0.55	0.55			0.55		0.24	0.24				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	355	951			1023		392	411				
v/s Ratio Prot		0.17			c0.32			c0.14				
v/s Ratio Perm	0.03						0.07					
v/c Ratio	0.05	0.32			0.58		0.28	0.58				
Uniform Delay, d1	5.1	6.0			7.2		15.0	16.2				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.2			0.8		0.4	2.0				
Delay (s)	5.1	6.2			8.0		15.4	18.2				
Level of Service	A	A			A		B	B				
Approach Delay (s)		6.1			8.0			17.3			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1668		1711	1801	1531		1626		1652	1739	1583
Flt Permitted	0.47	1.00		0.64	1.00	1.00		0.90		0.73	1.00	1.00
Satd. Flow (perm)	765	1668		1161	1801	1531		1480		1265	1739	1583
Volume (vph)	30	155	5	45	310	135	10	25	5	70	190	80
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	172	6	50	344	150	11	28	6	78	211	89
RTOR Reduction (vph)	0	1	0	0	0	84	0	5	0	0	0	60
Lane Group Flow (vph)	33	177	0	50	344	66	0	40	0	78	211	29
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	23.2	23.2		24.5	24.5	24.5		10.1		17.9	17.9	17.9
Effective Green, g (s)	24.2	24.2		25.5	25.5	25.5		11.1		18.9	18.9	18.9
Actuated g/C Ratio	0.42	0.42		0.44	0.44	0.44		0.19		0.33	0.33	0.33
Clearance Time (s)	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
Lane Grp Cap (vph)	321	701		514	797	678		285		441	571	519
v/s Ratio Prot		0.11			c0.19					0.01	c0.12	
v/s Ratio Perm	0.04			0.04		0.04		0.03		0.05		0.02
v/c Ratio	0.10	0.25		0.10	0.43	0.10		0.14		0.18	0.37	0.06
Uniform Delay, d1	10.1	10.8		9.3	11.1	9.3		19.3		13.9	14.8	13.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2		0.1	0.4	0.1		0.2		0.2	0.4	0.0
Delay (s)	10.3	11.0		9.4	11.4	9.4		19.5		14.0	15.2	13.3
Level of Service	B	B		A	B	A		B		B	B	B
Approach Delay (s)		10.9			10.7			19.5			14.5	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1735	1478	1486	1517			1834	1794	1593	1833	
Flt Permitted		0.98	1.00	0.65	1.00			0.89	1.00	0.63	1.00	
Satd. Flow (perm)		1709	1478	1024	1517			1658	1794	1049	1833	
Volume (vph)	5	140	45	25	275	70	60	130	20	25	45	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	156	50	28	306	78	67	144	22	28	50	6
RTOR Reduction (vph)	0	0	31	0	12	0	0	0	10	0	4	0
Lane Group Flow (vph)	0	162	19	28	372	0	0	211	12	28	52	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		15.3	15.3	15.3	15.3			12.2	12.2	12.2	12.2	
Effective Green, g (s)		16.3	16.3	16.3	16.3			13.2	13.2	13.2	13.2	
Actuated g/C Ratio		0.38	0.38	0.38	0.38			0.31	0.31	0.31	0.31	
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)		655	567	393	582			515	557	326	569	
v/s Ratio Prot					c0.25						0.03	
v/s Ratio Perm		0.09	0.01	0.03				c0.13	0.01	0.03		
v/c Ratio		0.25	0.03	0.07	0.64			0.41	0.02	0.09	0.09	
Uniform Delay, d1		8.9	8.2	8.3	10.7			11.6	10.2	10.4	10.4	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.1	2.3			0.5	0.0	0.1	0.1	
Delay (s)		9.1	8.2	8.4	13.0			12.1	10.2	10.5	10.5	
Level of Service		A	A	A	B			B	B	B	B	
Approach Delay (s)		8.9			12.7			11.9			10.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	42.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.98			1.00			1.00	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1813			1923			1852			2097	
Flt Permitted		0.95			0.96			0.98			0.99	
Satd. Flow (perm)		1740			1866			1816			2075	
Volume (vph)	10	30	5	5	20	5	20	280	5	5	140	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	33	6	6	22	6	22	311	6	6	156	6
RTOR Reduction (vph)	0	5	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	45	0	0	34	0	0	338	0	0	166	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		348			373			704			804	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.19			0.08	
v/c Ratio		0.13			0.09			0.48			0.21	
Uniform Delay, d1		26.3			26.1			18.4			16.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.8			0.5			2.3			0.6	
Delay (s)		27.1			26.6			20.8			16.9	
Level of Service		C			C			C			B	
Approach Delay (s)		27.1			26.6			20.8			16.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.97		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1853		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1853		
Volume (vph)	5	160	35	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	178	39	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	222	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	486		
v/s Ratio Prot	0.00	c0.12		
v/s Ratio Perm				
v/c Ratio	0.01	0.46		
Uniform Delay, d1	21.8	24.7		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	3.1		
Delay (s)	21.9	27.8		
Level of Service	C	C		
Approach Delay (s)		27.6		
Approach LOS		C		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1796	1583	1770	3536		1770	3492	
Flt Permitted		0.78	1.00		0.79	1.00	0.33	1.00		0.32	1.00	
Satd. Flow (perm)		1445	1583		1477	1583	618	3536		603	3492	
Volume (vph)	60	25	95	15	5	25	75	785	5	40	515	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	28	106	17	6	28	83	872	6	44	572	56
RTOR Reduction (vph)	0	0	87	0	0	23	0	1	0	0	10	0
Lane Group Flow (vph)	0	95	19	0	23	5	83	877	0	44	618	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		8.9	8.9		8.9	8.9	33.5	33.5		24.9	24.9	
Effective Green, g (s)		8.9	8.9		8.9	8.9	33.5	33.5		24.9	24.9	
Actuated g/C Ratio		0.18	0.18		0.18	0.18	0.66	0.66		0.49	0.49	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		255	280		261	280	516	2350		298	1725	
v/s Ratio Prot							0.01	c0.25			0.18	
v/s Ratio Perm		c0.07	0.01		0.02	0.00	0.09			0.07		
v/c Ratio		0.37	0.07		0.09	0.02	0.16	0.37		0.15	0.36	
Uniform Delay, d1		18.3	17.3		17.4	17.1	3.3	3.8		7.0	7.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.1		0.1	0.0	0.1	0.1		0.2	0.1	
Delay (s)		19.2	17.4		17.5	17.2	3.5	3.9		7.2	8.0	
Level of Service		B	B		B	B	A	A		A	A	
Approach Delay (s)		18.2			17.3			3.8			7.9	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	50.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3296		1652	3261	
Flt Permitted		0.75	1.00	0.71	1.00		0.39	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		674	3296		1652	3261	
Volume (vph)	50	10	240	15	5	10	85	980	15	10	545	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	267	17	6	11	94	1089	17	11	606	56
RTOR Reduction (vph)	0	0	237	0	10	0	0	1	0	0	8	0
Lane Group Flow (vph)	0	67	30	17	7	0	94	1105	0	11	654	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		709	2205		21	1363	
v/s Ratio Prot					0.00		0.03	c0.34		0.01	c0.20	
v/s Ratio Perm		c0.05	0.02	0.01			0.05					
v/c Ratio		0.45	0.18	0.11	0.03		0.13	0.50		0.52	0.48	
Uniform Delay, d1		29.1	28.3	28.0	27.8		4.8	5.8		34.4	14.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		0.4	0.8		10.4	1.2	
Delay (s)		29.9	28.4	28.2	27.8		5.2	6.6		44.8	16.1	
Level of Service		C	C	C	C		A	A		D	B	
Approach Delay (s)		28.7			28.0			6.5			16.5	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM Average Control Delay	13.1	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.48			
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1250	50	0	0	655	0	0	870	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1389	56	0	0	728	0	0	967	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	703	742	0	0	728	0	0	967	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.2	28.2			23.2			23.2	
Effective Green, g (s)				30.2	30.2			25.2			25.2	
Actuated g/C Ratio				0.48	0.48			0.40			0.40	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				801	805			1407			1407	
v/s Ratio Prot								0.21			c0.27	
v/s Ratio Perm				0.42	0.44							
v/c Ratio				0.88	0.92			0.52			0.69	
Uniform Delay, d1				14.9	15.5			14.5			15.8	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				10.7	15.8			0.3			1.4	
Delay (s)				25.6	31.3			14.8			17.2	
Level of Service				C	C			B			B	
Approach Delay (s)		0.0			28.6			14.8			17.2	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	8.0
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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	100	0	5	155	5	25	325	35	0	140	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	111	0	6	172	6	28	361	39	0	156	17

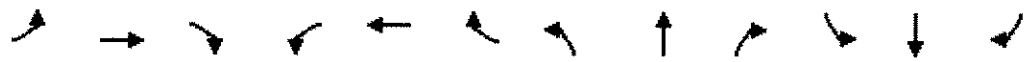
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	117	183	428	172
Volume Left (vph)	6	6	28	0
Volume Right (vph)	0	6	39	17
Hadj (s)	0.04	0.02	-0.01	-0.02
Departure Headway (s)	5.9	5.7	5.1	5.4
Degree Utilization, x	0.19	0.29	0.60	0.26
Capacity (veh/h)	535	564	680	609
Control Delay (s)	10.3	11.1	15.4	10.3
Approach Delay (s)	10.3	11.1	15.4	10.3
Approach LOS	B	B	C	B

Intersection Summary			
Delay	12.9		
HCM Level of Service	B		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	75	5	355	200	5	335
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	6	394	222	6	372
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked						
vC, conflicting volume	889	506			617	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	889	506			617	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	73	99			99	
cM capacity (veh/h)	312	567			963	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	89	617	378
Volume Left	83	0	6
Volume Right	6	222	0
cSH	321	1700	963
Volume to Capacity	0.28	0.36	0.01
Queue Length 95th (ft)	28	0	0
Control Delay (s)	20.5	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	20.5	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	0	50	10	0	10	20	830	5	5	570	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	0	56	11	0	11	22	922	6	6	633	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1183	1639	339	1353	1658	464	678			928		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1183	1639	339	1353	1658	464	678			928		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	100	92	89	100	98	98			99		
cM capacity (veh/h)	138	96	657	97	94	545	910			733		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	22	483	467	322	361
Volume Left	22	11	22	0	6	0
Volume Right	56	11	0	6	0	44
cSH	317	165	910	1700	733	1700
Volume to Capacity	0.25	0.14	0.02	0.27	0.01	0.21
Queue Length 95th (ft)	24	11	2	0	1	0
Control Delay (s)	20.0	30.3	0.7	0.0	0.3	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	20.0	30.3	0.4		0.1	
Approach LOS	C	D				

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	195	30	110	70	10	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	217	33	122	78	11	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			250		556	233
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		556	233
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		98	94
cM capacity (veh/h)			1316		447	806

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	250	200	56
Volume Left	0	122	11
Volume Right	33	0	44
cSH	1700	1316	694
Volume to Capacity	0.15	0.09	0.08
Queue Length 95th (ft)	0	8	7
Control Delay (s)	0.0	5.2	10.6
Lane LOS		A	B
Approach Delay (s)	0.0	5.2	10.6
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD ALT2*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*565*	*280*	*5*	*390*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*627*	*311*	*5*	*433*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*60*	*0*	*15*	*85*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*66*	*0*	*16*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*5*			*66*			*110*
C (m) (vph)		*726*			*541*			*392*
v/c		*0.01*			*0.12*			*0.28*
95% queue length		*0.02*			*0.41*			*1.13*
Control Delay		*10.0*			*12.6*			*17.7*
LOS		*A*			*B*			*C*
Approach Delay	--	--	*12.6*			*17.7*		
Approach LOS	--	--	*B*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD ALT 2*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*55*	*510*	*0*	*0*	*410*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*61*	*566*	*0*	*0*	*455*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*145*	*0*	*0*	*0*	*0*
Peak Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*161*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

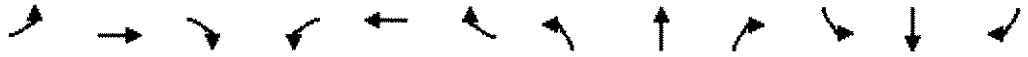
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*61*				*161*			
C (m) (vph)	*1106*				*183*			
v/c	*0.06*				*0.88*			
95% queue length	*0.17*				*6.52*			
Control Delay	*8.4*				*89.9*			
LOS	*A*				*F*			
Approach Delay	--	--	*89.9*					
Approach LOS	--	--	*F*					

NULL ALTERNATIVE

2008 PM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1830	1583		1813	1583	1770	3503		1770	3521	
Flt Permitted		0.73	1.00		0.79	1.00	0.29	1.00		0.95	1.00	
Satd. Flow (perm)		1366	1583		1475	1583	546	3503		1770	3521	
Volume (vph)	20	35	65	90	75	190	85	1010	75	100	850	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	39	72	100	83	211	94	1122	83	111	944	33
RTOR Reduction (vph)	0	0	60	0	0	95	0	0	0	0	0	0
Lane Group Flow (vph)	0	61	12	0	183	116	94	1205	0	111	977	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		21.5	21.5		21.5	35.5	83.8	83.8		14.0	102.8	
Effective Green, g (s)		22.5	22.5		22.5	37.5	84.8	84.8		15.0	103.8	
Actuated g/C Ratio		0.16	0.16		0.16	0.27	0.61	0.61		0.11	0.74	
Clearance Time (s)		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	
Lane Grp Cap (vph)		220	254		237	424	331	2122		190	2611	
v/s Ratio Prot			0.01			0.07		c0.34		c0.06	0.28	
v/s Ratio Perm		0.04			c0.12		0.17					
v/c Ratio		0.28	0.05		0.77	0.27	0.28	0.57		0.58	0.37	
Uniform Delay, d1		51.6	49.7		56.3	40.5	13.1	16.6		59.5	6.5	
Progression Factor		1.00	1.00		1.00	1.00	0.38	0.44		1.00	1.00	
Incremental Delay, d2		0.7	0.1		14.4	0.4	1.8	0.9		4.5	0.4	
Delay (s)		52.3	49.7		70.7	40.8	6.8	8.2		64.1	6.9	
Level of Service		D	D		E	D	A	A		E	A	
Approach Delay (s)		50.9			54.7			8.1			12.7	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.97			0.88		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1812			1631		1770	3524		1770	3519	
Flt Permitted	0.30	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	566	1812			1622		1770	3524		1770	3519	
Volume (vph)	30	45	10	5	10	160	15	980	30	90	880	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	50	11	6	11	178	17	1089	33	100	978	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	33	61	0	0	195	0	17	1122	0	100	1017	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	21.5	21.5			21.5		3.4	84.5		12.8	93.9	
Effective Green, g (s)	22.5	22.5			22.5		4.4	85.5		13.8	94.9	
Actuated g/C Ratio	0.16	0.16			0.16		0.03	0.61		0.10	0.68	
Clearance Time (s)	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	
Lane Grp Cap (vph)	91	291			261		56	2152		174	2385	
v/s Ratio Prot		0.03					0.01	c0.32		c0.06	0.29	
v/s Ratio Perm	0.06				c0.12							
v/c Ratio	0.36	0.21			0.75		0.30	0.52		0.57	0.43	
Uniform Delay, d1	52.4	51.0			56.0		66.3	15.6		60.3	10.2	
Progression Factor	1.00	1.00			1.00		1.19	0.37		1.21	0.73	
Incremental Delay, d2	2.5	0.4			11.1		2.4	0.7		4.3	0.5	
Delay (s)	54.8	51.4			67.1		81.5	6.4		77.4	7.9	
Level of Service	D	D			E		F	A		E	A	
Approach Delay (s)		52.6			67.1			7.5			14.2	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frt		0.99			0.95			0.98		1.00	0.99	
Flt Protected		0.98			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1736			1667			3364		1711	3386	
Flt Permitted		0.72			0.77			1.00		0.95	1.00	
Satd. Flow (perm)		1281			1314			3364		1711	3386	
Volume (vph)	50	45	10	115	35	95	0	880	110	95	745	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	50	11	128	39	106	0	978	122	106	828	61
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	117	0	0	273	0	0	1100	0	106	889	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		31.8			31.8			74.3		12.7	92.0	
Effective Green, g (s)		32.8			32.8			75.3		13.7	93.0	
Actuated g/C Ratio		0.23			0.23			0.54		0.10	0.66	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		300			308			1809		167	2249	
v/s Ratio Prot								c0.33		c0.06	0.26	
v/s Ratio Perm		0.09			c0.21							
v/c Ratio		0.39			0.89			0.61		0.63	0.40	
Uniform Delay, d1		45.2			51.8			22.2		60.7	10.7	
Progression Factor		1.00			1.00			0.43		1.35	0.40	
Incremental Delay, d2		0.8			24.8			1.2		7.1	0.5	
Delay (s)		46.0			76.6			10.8		89.4	4.8	
Level of Service		D			E			B		F	A	
Approach Delay (s)		46.0			76.6			10.8			13.8	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

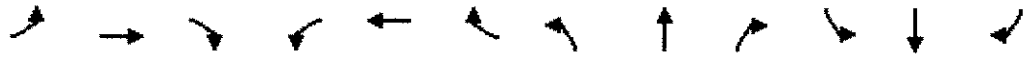
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.98			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		1.00	1.00		0.98	
Satd. Flow (prot)		1826			1840	1583		1856	1583		1813	
Flt Permitted		0.98			0.87	1.00		0.97	1.00		0.86	
Satd. Flow (perm)		1800			1620	1583		1804	1583		1587	
Volume (vph)	10	190	30	70	210	40	5	65	55	70	120	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	211	33	78	233	44	6	72	61	78	133	17
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	46	0	0	0
Lane Group Flow (vph)	0	255	0	0	311	21	0	78	15	0	228	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		20.3			20.3	20.3		10.4	10.4		10.4	
Effective Green, g (s)		21.3			21.3	21.3		11.4	11.4		11.4	
Actuated g/C Ratio		0.47			0.47	0.47		0.25	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)		843			758	741		452	397		398	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.19	0.01		0.04	0.01		c0.14	
v/c Ratio		0.30			0.41	0.03		0.17	0.04		0.57	
Uniform Delay, d1		7.5			8.0	6.5		13.4	12.9		14.9	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.2			0.4	0.0		0.2	0.0		2.0	
Delay (s)		7.7			8.3	6.5		13.5	12.9		16.9	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		7.7			8.1			13.3			16.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.37	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	674	1863	1801	1583
Volume (vph)	135	60	145	105	435	175
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	150	67	161	117	483	194
RTOR Reduction (vph)	0	45	0	0	0	0
Lane Group Flow (vph)	150	22	161	117	483	194
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	45.8	45.8	78.0	78.0	78.0	78.0
Effective Green, g (s)	46.8	46.8	79.0	79.0	79.0	79.0
Actuated g/C Ratio	0.33	0.33	0.56	0.56	0.56	0.56
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)	572	529	380	1051	1016	893
v/s Ratio Prot	c0.09	0.01		0.06	c0.27	
v/s Ratio Perm			0.24			0.12
v/c Ratio	0.26	0.04	0.42	0.11	0.48	0.22
Uniform Delay, d1	34.0	31.5	17.5	14.2	18.2	15.1
Progression Factor	0.71	0.35	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	3.4	0.2	0.4	0.1
Delay (s)	24.9	11.0	20.9	14.4	18.5	15.3
Level of Service	C	B	C	B	B	B
Approach Delay (s)	20.6			18.2	17.6	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

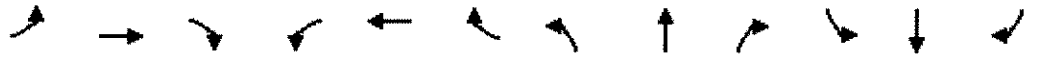
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.92			0.98		1.00	0.98	
Flt Protected		0.99			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1919			1819			1934		1711	1759	
Flt Permitted		0.74			0.96			0.94		0.64	1.00	
Satd. Flow (perm)		1450			1758			1826		1153	1759	
Volume (vph)	40	75	20	25	75	145	15	75	15	140	215	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	83	22	28	83	161	17	83	17	156	239	44
RTOR Reduction (vph)	0	10	0	0	77	0	0	7	0	0	7	0
Lane Group Flow (vph)	0	139	0	0	195	0	0	110	0	156	276	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.8			8.8			15.7		27.1	27.1	
Effective Green, g (s)		9.8			9.8			16.7		28.1	28.1	
Actuated g/C Ratio		0.20			0.20			0.34		0.58	0.58	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		292			354			627		752	1017	
v/s Ratio Prot										0.03	c0.16	
v/s Ratio Perm		0.10			c0.11			0.06		0.09		
v/c Ratio		0.48			0.55			0.18		0.21	0.27	
Uniform Delay, d1		17.1			17.4			11.1		5.0	5.1	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.2			1.7			0.1		0.1	0.1	
Delay (s)		18.4			19.2			11.3		5.1	5.3	
Level of Service		B			B			B		A	A	
Approach Delay (s)		18.4			19.2			11.3			5.2	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.91			0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1684			1726		1770	3518		1770	3509	
Flt Permitted		0.85			0.52		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1442			917		1770	3518		1770	3509	
Volume (vph)	80	70	275	145	50	125	105	725	30	90	735	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	89	78	306	161	56	139	117	806	33	100	817	50
RTOR Reduction (vph)	0	48	0	0	17	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	425	0	0	339	0	117	837	0	100	865	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		52.2			52.2		13.4	54.5		12.1	53.2	
Effective Green, g (s)		53.2			53.2		14.4	55.5		13.1	54.2	
Actuated g/C Ratio		0.38			0.38		0.10	0.40		0.09	0.39	
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)		548			348		182	1395		166	1358	
v/s Ratio Prot							c0.07	0.24		0.06	c0.25	
v/s Ratio Perm		0.29			c0.37							
v/c Ratio		0.77			0.97		0.64	0.60		0.60	0.64	
Uniform Delay, d1		38.1			42.7		60.3	33.5		60.9	34.9	
Progression Factor		1.00			0.56		1.09	1.06		0.99	1.14	
Incremental Delay, d2		6.8			40.4		7.2	1.8		5.5	0.9	
Delay (s)		44.9			64.4		73.2	37.3		65.7	40.8	
Level of Service		D			E		E	D		E	D	
Approach Delay (s)		44.9			64.4			41.7			43.4	
Approach LOS		D			E			D			D	

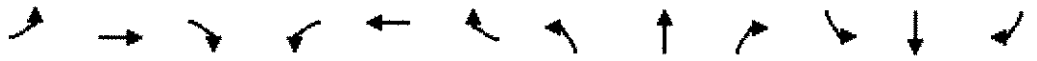
Intersection Summary			
HCM Average Control Delay	45.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↑↱		↰	↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.87			0.94		1.00	1.00		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1623			1708		1770	3525		1770	3535	
Flt Permitted		0.98			0.52		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1600			911		1770	3525		1770	3535	
Volume (vph)	5	0	75	35	0	25	5	890	25	5	1140	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	83	39	0	28	6	989	28	6	1267	11
RTOR Reduction (vph)	0	76	0	0	20	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	13	0	0	47	0	6	1016	0	6	1278	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		10.0			10.0		1.6	107.2		1.6	107.2	
Effective Green, g (s)		11.0			11.0		2.6	108.2		2.6	108.2	
Actuated g/C Ratio		0.08			0.08		0.02	0.77		0.02	0.77	
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)		126			72		33	2724		33	2732	
v/s Ratio Prot							c0.00	0.29		0.00	c0.36	
v/s Ratio Perm		0.01			c0.05							
v/c Ratio		0.10			0.65		0.18	0.37		0.18	0.47	
Uniform Delay, d1		59.9			62.6		67.7	5.1		67.7	5.7	
Progression Factor		1.00			0.82		0.87	0.93		1.00	0.64	
Incremental Delay, d2		0.3			18.1		2.4	0.4		1.9	0.4	
Delay (s)		60.2			69.7		61.3	5.1		69.6	4.0	
Level of Service		E			E		E	A		E	A	
Approach Delay (s)		60.2			69.7			5.4			4.3	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

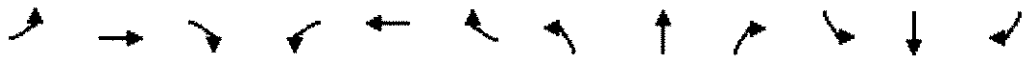
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↑↱			↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.98		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1762			1805		1770	3536		1770	3522	
Flt Permitted		0.84			0.69		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1494			1270		1770	3536		1770	3522	
Volume (vph)	65	120	85	40	75	15	55	840	5	10	1200	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	133	94	44	83	17	61	933	6	11	1333	44
RTOR Reduction (vph)	0	13	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	286	0	0	140	0	61	939	0	11	1376	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		29.1			29.1		7.8	86.5		3.2	81.9	
Effective Green, g (s)		30.1			30.1		8.8	87.5		4.2	82.9	
Actuated g/C Ratio		0.22			0.22		0.06	0.62		0.03	0.59	
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)		321			273		111	2210		53	2086	
v/s Ratio Prot							c0.03	0.27		0.01	c0.39	
v/s Ratio Perm		c0.19			0.11							
v/c Ratio		0.89			0.51		0.55	0.42		0.21	0.66	
Uniform Delay, d1		53.4			48.5		63.7	13.4		66.3	19.1	
Progression Factor		1.00			1.00		0.85	1.50		1.15	0.59	
Incremental Delay, d2		25.2			1.6		5.1	0.6		1.8	1.5	
Delay (s)		78.6			50.1		59.5	20.6		78.0	12.7	
Level of Service		E			D		E	C		E	B	
Approach Delay (s)		78.6			50.1			23.0			13.3	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1583		1798		1770	3496		1770	3521	
Flt Permitted		0.70	1.00		0.67		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1306	1583		1242		1770	3496		1770	3521	
Volume (vph)	60	25	105	90	50	5	85	835	75	5	1275	45
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	28	117	100	56	6	94	928	83	6	1417	50
RTOR Reduction (vph)	0	0	98	0	1	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	95	19	0	161	0	94	1008	0	6	1466	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		21.4	21.4		21.4		11.7	95.8		1.6	85.7	
Effective Green, g (s)		22.4	22.4		22.4		12.7	96.8		2.6	86.7	
Actuated g/C Ratio		0.16	0.16		0.16		0.09	0.69		0.02	0.62	
Clearance Time (s)		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	
Lane Grp Cap (vph)		209	253		199		161	2417		33	2181	
v/s Ratio Prot							c0.05	0.29		0.00	c0.42	
v/s Ratio Perm		0.07	0.01		c0.13							
v/c Ratio		0.45	0.07		0.81		0.58	0.42		0.18	0.67	
Uniform Delay, d1		53.3	50.0		56.7		61.1	9.4		67.7	17.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.31	0.25	
Incremental Delay, d2		1.6	0.1		21.0		5.3	0.5		2.0	1.3	
Delay (s)		54.8	50.1		77.8		66.4	9.9		90.3	5.6	
Level of Service		D	D		E		E	A		F	A	
Approach Delay (s)		52.2			77.8			14.7			5.9	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	67.9%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	135	80	30	165	15	10	100	15	20	175	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	150	89	33	183	17	11	111	17	22	194	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	250	233	139	244
Volume Left (vph)	11	33	11	22
Volume Right (vph)	89	17	17	28
Hadj (s)	-0.17	0.02	-0.02	-0.02
Departure Headway (s)	5.2	5.4	5.6	5.4
Degree Utilization, x	0.36	0.35	0.22	0.37
Capacity (veh/h)	638	614	565	608
Control Delay (s)	11.1	11.3	10.2	11.6
Approach Delay (s)	11.1	11.3	10.2	11.6
Approach LOS	B	B	B	B

Intersection Summary			
Delay	11.2		
HCM Level of Service	B		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	140	75	50	115	10	40	105	55	25	210	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	156	83	56	128	11	44	117	61	28	233	56

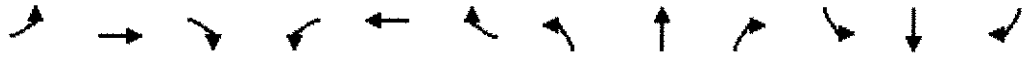
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	250	194	222	317
Volume Left (vph)	11	56	44	28
Volume Right (vph)	83	11	61	56
Hadj (s)	-0.16	0.06	-0.09	-0.05
Departure Headway (s)	5.7	6.0	5.7	5.6
Degree Utilization, x	0.39	0.32	0.35	0.49
Capacity (veh/h)	574	535	565	601
Control Delay (s)	12.3	11.8	11.8	13.8
Approach Delay (s)	12.3	11.8	11.8	13.8
Approach LOS	B	B	B	B

Intersection Summary			
Delay	12.6		
HCM Level of Service	B		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	65	5	10	100	80	5	25	10	100	50	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	72	6	11	111	89	6	28	11	111	56	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	83	211	44	178
Volume Left (vph)	6	11	6	111
Volume Right (vph)	6	89	11	11
Hadj (s)	0.01	-0.21	-0.09	0.12
Departure Headway (s)	4.7	4.4	4.7	4.8
Degree Utilization, x	0.11	0.26	0.06	0.24
Capacity (veh/h)	710	781	701	709
Control Delay (s)	8.3	8.8	8.0	9.2
Approach Delay (s)	8.3	8.8	8.0	9.2
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	20	75	5	25	15	215	50	20	495	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	22	83	6	28	17	239	56	22	550	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	931	928	556	925	906	267	561			294		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	931	928	556	925	906	267	561			294		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	98	96	64	98	96	98			98		
cM capacity (veh/h)	229	259	531	229	267	772	1010			1267		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	39	117	311	583
Volume Left	11	83	17	22
Volume Right	22	28	56	11
cSH	348	277	1010	1267
Volume to Capacity	0.11	0.42	0.02	0.02
Queue Length 95th (ft)	9	50	1	1
Control Delay (s)	16.7	27.1	0.6	0.5
Lane LOS	C	D	A	A
Approach Delay (s)	16.7	27.1	0.6	0.5
Approach LOS	C	D		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	55	30	215	25	50	555
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	33	239	28	56	617
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked						
vC, conflicting volume	981	253			267	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	981	253			267	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	96			96	
cM capacity (veh/h)	265	786			1297	

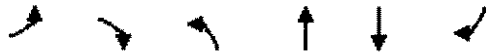
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	267	672
Volume Left	61	0	56
Volume Right	33	28	0
cSH	346	1700	1297
Volume to Capacity	0.27	0.16	0.04
Queue Length 95th (ft)	27	0	3
Control Delay (s)	19.3	0.0	1.1
Lane LOS	C		A
Approach Delay (s)	19.3	0.0	1.1
Approach LOS	C		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	20	20	240	10	20	435
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	22	267	11	22	483
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.85					
vC, conflicting volume	800	272			278	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	764	272			278	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	97			98	
cM capacity (veh/h)	310	766			1285	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	44	278	506
Volume Left	22	0	22
Volume Right	22	11	0
cSH	441	1700	1285
Volume to Capacity	0.10	0.16	0.02
Queue Length 95th (ft)	8	0	1
Control Delay (s)	14.1	0.0	0.5
Lane LOS	B		A
Approach Delay (s)	14.1	0.0	0.5
Approach LOS	B		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	25	5	25	205	415	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	6	28	228	461	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.87	0.87	0.87			
vC, conflicting volume	764	481	500			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	727	400	422			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	99	97			
cM capacity (veh/h)	329	563	984			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	33	256	500
Volume Left	28	28	0
Volume Right	6	0	39
cSH	353	984	1700
Volume to Capacity	0.09	0.03	0.29
Queue Length 95th (ft)	8	2	0
Control Delay (s)	16.3	1.2	0.0
Lane LOS	C	A	
Approach Delay (s)	16.3	1.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			1.00			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1839		1770	1783			1966			1764	
Flt Permitted	0.29	1.00		0.33	1.00			0.91			0.94	
Satd. Flow (perm)	530	1839		614	1783			1807			1664	
Volume (vph)	70	385	35	40	420	30	45	225	5	35	245	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	428	39	44	467	33	50	250	6	39	272	39
RTOR Reduction (vph)	0	4	0	0	4	0	0	1	0	0	4	0
Lane Group Flow (vph)	78	463	0	44	496	0	0	305	0	0	346	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	18.4	18.4		18.4	18.4			16.3			16.3	
Effective Green, g (s)	19.4	19.4		19.4	19.4			17.3			17.3	
Actuated g/C Ratio	0.39	0.39		0.39	0.39			0.35			0.35	
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)	209	724		242	702			634			584	
v/s Ratio Prot		0.25			c0.28							
v/s Ratio Perm	0.15			0.07				0.17			c0.21	
v/c Ratio	0.37	0.64		0.18	0.71			0.48			0.59	
Uniform Delay, d1	10.6	12.1		9.8	12.6			12.5			13.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.1	1.9		0.4	3.3			0.6			1.6	
Delay (s)	11.8	14.0		10.1	15.8			13.1			14.7	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		13.7			15.4			13.1			14.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1879		1652	1759				
Flt Permitted	0.31	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	610	1739			1879		1652	1759				
Volume (vph)	50	445	0	0	455	40	65	250	45	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	494	0	0	506	44	72	278	50	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	6	0	0	0	0
Lane Group Flow (vph)	56	494	0	0	546	0	72	322	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	20.2	20.2			20.2		13.6	13.6				
Effective Green, g (s)	21.2	21.2			21.2		14.6	14.6				
Actuated g/C Ratio	0.46	0.46			0.46		0.32	0.32				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	280	798			862		522	556				
v/s Ratio Prot		0.28			c0.29			c0.18				
v/s Ratio Perm	0.09						0.04					
v/c Ratio	0.20	0.62			0.63		0.14	0.58				
Uniform Delay, d1	7.4	9.4			9.5		11.3	13.2				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.4	1.4			1.5		0.1	1.5				
Delay (s)	7.8	10.9			11.1		11.4	14.7				
Level of Service	A	B			B		B	B				
Approach Delay (s)		10.6			11.1			14.1			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1658		1711	1801	1531		1605		1652	1739	1583
Flt Permitted	0.48	1.00		0.51	1.00	1.00		0.58		0.80	1.00	1.00
Satd. Flow (perm)	783	1658		918	1801	1531		927		1384	1739	1583
Volume (vph)	110	250	20	75	290	160	5	55	25	225	275	80
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	278	22	83	322	178	6	61	28	250	306	89
RTOR Reduction (vph)	0	3	0	0	0	110	0	16	0	0	0	57
Lane Group Flow (vph)	122	297	0	83	322	68	0	79	0	250	306	32
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	18.5	18.5		18.3	18.3	18.3		5.1		17.2	17.2	17.2
Effective Green, g (s)	19.5	19.5		19.3	19.3	19.3		6.1		18.2	18.2	18.2
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.38		0.12		0.36	0.36	0.36
Clearance Time (s)	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
Lane Grp Cap (vph)	301	638		349	686	583		112		540	624	568
v/s Ratio Prot		c0.18			0.18					0.07	c0.18	
v/s Ratio Perm	0.16			0.09		0.04		c0.09		0.09		0.02
v/c Ratio	0.41	0.47		0.24	0.47	0.12		0.71		0.46	0.49	0.06
Uniform Delay, d1	11.4	11.7		10.7	11.8	10.2		21.4		13.4	12.6	10.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5		0.4	0.5	0.1		18.4		0.6	0.6	0.0
Delay (s)	12.3	12.2		11.0	12.3	10.3		39.8		14.0	13.3	10.7
Level of Service	B	B		B	B	B		D		B	B	B
Approach Delay (s)		12.2			11.5			39.8			13.2	
Approach LOS		B			B			D			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1733	1478	1486	1516			1826	1794	1593	1829	
Flt Permitted		0.96	1.00	0.56	1.00			0.84	1.00	0.65	1.00	
Satd. Flow (perm)		1672	1478	879	1516			1572	1794	1092	1829	
Volume (vph)	15	220	80	55	245	65	60	90	60	100	110	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	244	89	61	272	72	67	100	67	111	122	17
RTOR Reduction (vph)	0	0	53	0	14	0	0	0	37	0	4	0
Lane Group Flow (vph)	0	261	36	61	330	0	0	167	30	111	135	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		11.3	11.3	11.3	11.3			14.0	14.0	14.0	14.0	
Effective Green, g (s)		12.3	12.3	12.3	12.3			15.0	15.0	15.0	15.0	
Actuated g/C Ratio		0.31	0.31	0.31	0.31			0.37	0.37	0.37	0.37	
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)		510	451	268	463			585	668	406	681	
v/s Ratio Prot					c0.22						0.07	
v/s Ratio Perm		0.16	0.02	0.07				c0.11	0.02	0.10		
v/c Ratio		0.51	0.08	0.23	0.71			0.29	0.04	0.27	0.20	
Uniform Delay, d1		11.5	10.0	10.5	12.4			8.9	8.1	8.8	8.6	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.9	0.1	0.4	5.1			0.3	0.0	0.4	0.1	
Delay (s)		12.4	10.0	10.9	17.6			9.2	8.1	9.2	8.7	
Level of Service		B	B	B	B			A	A	A	A	
Approach Delay (s)		11.8			16.6			8.9			8.9	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM Average Control Delay	12.2	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	57.3%	ICU Level of Service	B	
Analysis Period (min)	15			

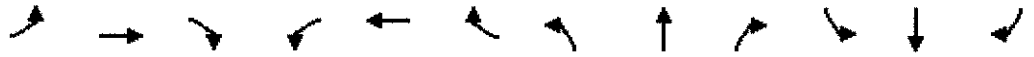
c Critical Lane Group

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			1.00			0.99	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1808			1926			1852			2094	
Flt Permitted		0.94			0.89			0.97			0.99	
Satd. Flow (perm)		1715			1750			1805			2085	
Volume (vph)	15	45	10	20	30	5	15	230	5	5	275	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	11	22	33	6	17	256	6	6	306	17
RTOR Reduction (vph)	0	7	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	71	0	0	61	0	0	278	0	0	327	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		343			350			699			808	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			0.15			c0.16	
v/c Ratio		0.21			0.17			0.40			0.40	
Uniform Delay, d1		26.7			26.5			17.7			17.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.1			1.7			1.5	
Delay (s)		28.1			27.6			19.4			19.3	
Level of Service		C			C			B			B	
Approach Delay (s)		28.1			27.6			19.4			19.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

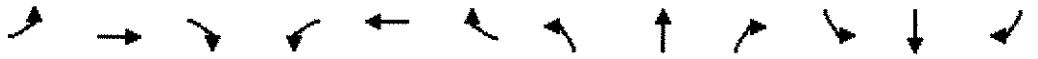
Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1876		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1876		
Volume (vph)	15	325	25	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	361	28	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	394	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	492		
v/s Ratio Prot	0.01	c0.21		
v/s Ratio Perm				
v/c Ratio	0.03	0.80		
Uniform Delay, d1	22.0	27.6		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	12.9		
Delay (s)	22.1	40.4		
Level of Service	C	D		
Approach Delay (s)		39.7		
Approach LOS		D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	1583		1793	1583	1770	3533		1770	3493	
Flt Permitted		0.72	1.00		0.75	1.00	0.22	1.00		0.28	1.00	
Satd. Flow (perm)		1348	1583		1397	1583	401	3533		528	3493	
Volume (vph)	55	10	115	35	10	20	90	900	10	55	790	75
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	11	128	39	11	22	100	1000	11	61	878	83
RTOR Reduction (vph)	0	0	108	0	0	19	0	1	0	0	8	0
Lane Group Flow (vph)	0	72	20	0	50	3	100	1010	0	61	953	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		9.2	9.2		9.2	9.2	41.4	41.4		32.6	32.6	
Effective Green, g (s)		9.2	9.2		9.2	9.2	41.4	41.4		32.6	32.6	
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.71	0.71		0.56	0.56	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		212	249		219	249	395	2496		294	1943	
v/s Ratio Prot							0.02	c0.29			c0.27	
v/s Ratio Perm		c0.05	0.01		0.04	0.00	0.16			0.12		
v/c Ratio		0.34	0.08		0.23	0.01	0.25	0.40		0.21	0.49	
Uniform Delay, d1		22.0	21.1		21.6	20.9	3.7	3.5		6.5	7.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.1		0.5	0.0	0.3	0.1		0.4	0.2	
Delay (s)		23.0	21.2		22.1	20.9	4.1	3.6		6.9	8.1	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		21.8			21.8			3.7			8.1	
Approach LOS		C			C			A			A	

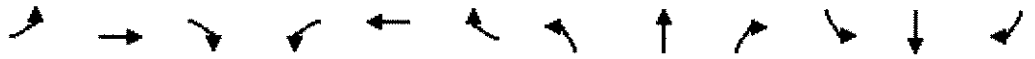
Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1478	1770	1909		1652	3296		1652	3291	
Flt Permitted		0.79	1.00	0.71	1.00		0.28	1.00		0.95	1.00	
Satd. Flow (perm)		1415	1478	1329	1909		485	3296		1652	3291	
Volume (vph)	35	25	120	30	20	35	165	1050	15	40	810	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	28	133	33	22	39	183	1167	17	44	900	22
RTOR Reduction (vph)	0	0	120	0	35	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	67	13	33	26	0	183	1183	0	44	920	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		6.7	6.7	6.7	6.7		42.0	42.0		3.5	28.5	
Effective Green, g (s)		6.7	6.7	6.7	6.7		43.0	43.0		3.5	29.5	
Actuated g/C Ratio		0.10	0.10	0.10	0.10		0.64	0.64		0.05	0.44	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		140	146	132	189		601	2093		85	1434	
v/s Ratio Prot					0.01		0.08	c0.36		0.03	c0.28	
v/s Ratio Perm		c0.05	0.01	0.02			0.12					
v/c Ratio		0.48	0.09	0.25	0.14		0.30	0.57		0.52	0.64	
Uniform Delay, d1		28.8	27.7	28.2	27.9		8.3	7.0		31.3	15.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.1	0.4	0.1		1.3	1.1		2.2	2.2	
Delay (s)		29.8	27.8	28.5	28.0		9.6	8.1		33.5	17.2	
Level of Service		C	C	C	C		A	A		C	B	
Approach Delay (s)		28.5			28.2			8.3			17.9	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM Average Control Delay	14.1	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	52.8%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1700			3539			3537	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1700			3539			3537	
Volume (vph)	0	0	0	1295	135	0	0	740	0	0	1260	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1439	150	0	0	822	0	0	1400	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	774	815	0	0	822	0	0	1405	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			29.5			29.5	
Effective Green, g (s)				30.0	30.0			31.5			31.5	
Actuated g/C Ratio				0.43	0.43			0.45			0.45	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				726	734			1604			1603	
v/s Ratio Prot								0.23			c0.40	
v/s Ratio Perm				0.46	0.48							
v/c Ratio				1.07	1.11			0.51			0.88	
Uniform Delay, d1				19.8	19.8			13.5			17.2	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				52.4	67.7			0.3			5.7	
Delay (s)				72.2	87.5			13.8			23.0	
Level of Service				E	F			B			C	
Approach Delay (s)		0.0			80.0			13.8			23.0	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	44.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	155	60	30	110	15	20	270	45	65	250	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	172	67	33	122	17	22	300	50	72	278	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	261	172	372	378
Volume Left (vph)	22	33	22	72
Volume Right (vph)	67	17	50	28
Hadj (s)	-0.10	0.01	-0.03	0.03
Departure Headway (s)	6.6	7.0	6.2	6.2
Degree Utilization, x	0.48	0.33	0.64	0.65
Capacity (veh/h)	483	434	546	538
Control Delay (s)	15.5	13.4	19.5	20.2
Approach Delay (s)	15.5	13.4	19.5	20.2
Approach LOS	C	B	C	C

Intersection Summary			
Delay	18.0		
HCM Level of Service	C		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	145	5	335	200	5	590
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	161	6	372	222	6	656
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.92					
vC, conflicting volume	1150	483			594	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1163	483			594	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	18	99			99	
cM capacity (veh/h)	198	583			982	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	167	594	661
Volume Left	161	0	6
Volume Right	6	222	0
cSH	202	1700	982
Volume to Capacity	0.82	0.35	0.01
Queue Length 95th (ft)	150	0	0
Control Delay (s)	73.7	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	73.7	0.0	0.2
Approach LOS	F		

Intersection Summary			
Average Delay	8.7		
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	0	50	10	0	10	10	935	5	5	890	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	0	56	11	0	11	11	1039	6	6	989	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1561	2075	503	1625	2081	522	1006			1044		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1561	2075	503	1625	2081	522	1006			1044		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	100	89	81	100	98	98			99		
cM capacity (veh/h)	73	52	514	59	51	499	685			662		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	22	531	525	500	511
Volume Left	22	11	11	0	6	0
Volume Right	56	11	0	6	0	17
cSH	188	106	685	1700	662	1700
Volume to Capacity	0.41	0.21	0.02	0.31	0.01	0.30
Queue Length 95th (ft)	47	19	1	0	1	0
Control Delay (s)	37.0	47.6	0.5	0.0	0.2	0.0
Lane LOS	E	E	A		A	
Approach Delay (s)	37.0	47.6	0.2		0.1	
Approach LOS	E	E				

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	44.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	125	20	35	145	35	65
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	22	39	161	39	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			161		389	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			161		389	150
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	92
cM capacity (veh/h)			1418		598	896

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	161	200	111
Volume Left	0	39	39
Volume Right	22	0	72
cSH	1700	1418	763
Volume to Capacity	0.09	0.03	0.15
Queue Length 95th (ft)	0	2	13
Control Delay (s)	0.0	1.7	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	10.5
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD ALT2*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*545*	*270*	*30*	*690*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*605*	*300*	*33*	*766*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*60*	*0*	*30*	*75*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*66*	*0*	*33*	*83*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*33*			*66*			*116*
C (m) (vph)		*747*			*555*			*174*
v/c		*0.04*			*0.12*			*0.67*
95% queue length		*0.14*			*0.40*			*3.90*
Control Delay		*10.0*			*12.4*			*59.5*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*12.4*			*59.5*		
Approach LOS	--	--	*B*			*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2008 BUILD ALT2*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*65*	*480*	*0*	*0*	*735*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*72*	*533*	*0*	*0*	*816*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

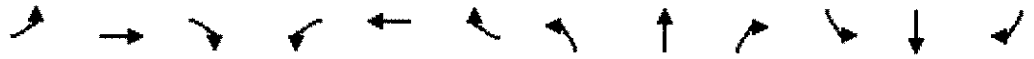
Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*160*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*177*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*72*				*177*			
C (m) (vph)	*812*				*107*			
v/c	*0.09*				*1.65*			
95% queue length	*0.29*				*13.62*			
Control Delay	*9.9*				*402.0*			
LOS	*A*				*F*			
Approach Delay	--	--	*402.0*					
Approach LOS	--	--	*F*					

NULL ALTERNATIVE

2028 AM PEAK HOUR



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1823	1583		1830	1583	1770	3512		1770	3532	
Flt Permitted		0.77	1.00		0.87	1.00	0.23	1.00		0.95	1.00	
Satd. Flow (perm)		1440	1583		1618	1583	420	3512		1770	3532	
Volume (vph)	15	20	45	50	90	70	55	735	40	115	1100	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	22	50	56	100	78	61	817	44	128	1222	17
RTOR Reduction (vph)	0	0	43	0	0	58	0	0	0	0	0	0
Lane Group Flow (vph)	0	39	7	0	156	20	61	861	0	128	1239	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		16.9	16.9		16.9	31.3	78.0	78.0		14.4	97.4	
Effective Green, g (s)		17.9	17.9		17.9	33.3	79.0	79.0		15.4	98.4	
Actuated g/C Ratio		0.14	0.14		0.14	0.26	0.61	0.61		0.12	0.76	
Clearance Time (s)		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	
Lane Grp Cap (vph)		198	218		223	405	255	2134		210	2673	
v/s Ratio Prot			0.00			0.01		0.25		c0.07	c0.35	
v/s Ratio Perm		0.03			c0.10		0.15					
v/c Ratio		0.20	0.03		0.70	0.05	0.24	0.40		0.61	0.46	
Uniform Delay, d1		49.7	48.5		53.5	36.4	11.7	13.3		54.4	5.9	
Progression Factor		1.00	1.00		1.00	1.00	0.36	0.39		1.00	1.00	
Incremental Delay, d2		0.5	0.1		9.2	0.1	2.0	0.5		4.9	0.6	
Delay (s)		50.2	48.6		62.7	36.5	6.3	5.7		59.4	6.5	
Level of Service		D	D		E	D	A	A		E	A	
Approach Delay (s)		49.3			54.0			5.7			11.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.92		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583			1683		1770	3535		1770	3527	
Flt Permitted	0.43	1.00			0.90		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	801	1583			1532		1770	3535		1770	3527	
Volume (vph)	20	0	10	60	15	120	5	695	5	125	1045	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	0	11	67	17	133	6	772	6	139	1161	28
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	11	0	0	217	0	6	778	0	139	1189	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	22.3	22.3			22.3		1.6	71.8		14.7	84.9	
Effective Green, g (s)	23.3	23.3			23.3		2.6	72.8		15.7	85.9	
Actuated g/C Ratio	0.18	0.18			0.18		0.02	0.56		0.12	0.66	
Clearance Time (s)	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	
Lane Grp Cap (vph)	144	284			275		35	1980		214	2331	
v/s Ratio Prot		0.01					0.00	0.22		c0.08	c0.34	
v/s Ratio Perm	0.03				c0.14							
v/c Ratio	0.15	0.04			0.79		0.17	0.39		0.65	0.51	
Uniform Delay, d1	45.0	44.1			51.0		62.6	16.1		54.5	11.3	
Progression Factor	1.00	1.00			1.00		1.20	0.48		1.28	0.73	
Incremental Delay, d2	0.5	0.1			13.9		2.2	0.5		6.1	0.7	
Delay (s)	45.5	44.2			64.9		77.6	8.3		75.6	8.9	
Level of Service	D	D			E		E	A		E	A	
Approach Delay (s)		45.1			64.9			8.8			15.9	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

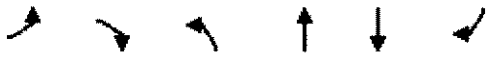
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.98		1.00	0.99	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1724		1711	3369		1711	3379	
Flt Permitted		0.67			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1201			1388		1711	3369		1711	3379	
Volume (vph)	60	20	5	125	70	25	5	620	70	90	950	85
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	22	6	139	78	28	6	689	78	100	1056	94
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	95	0	0	245	0	6	767	0	100	1150	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		26.2			26.2		1.6	70.8		11.8	81.0	
Effective Green, g (s)		27.2			27.2		2.6	71.8		12.8	82.0	
Actuated g/C Ratio		0.21			0.21		0.02	0.55		0.10	0.63	
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)		251			290		34	1861		168	2131	
v/s Ratio Prot							0.00	0.23		c0.06	c0.34	
v/s Ratio Perm		0.08			c0.18							
v/c Ratio		0.38			0.84		0.18	0.41		0.60	0.54	
Uniform Delay, d1		44.1			49.4		62.6	16.9		56.1	13.4	
Progression Factor		1.00			1.00		1.00	1.00		1.23	0.30	
Incremental Delay, d2		1.0			19.6		2.5	0.7		5.0	0.9	
Delay (s)		45.1			69.0		65.1	17.5		74.2	4.9	
Level of Service		D			E		E	B		E	A	
Approach Delay (s)		45.1			69.0			17.9			10.4	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		1.00			1.00	0.85		1.00	0.85		0.98	
Flt Protected		0.99			1.00	1.00		0.98	1.00		0.99	
Satd. Flow (prot)		1835			1857	1583		1831	1583		1795	
Flt Permitted		0.89			0.98	1.00		0.84	1.00		0.88	
Satd. Flow (perm)		1645			1818	1583		1565	1583		1599	
Volume (vph)	45	145	5	15	225	45	55	105	5	50	125	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	161	6	17	250	50	61	117	6	56	139	44
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	4	0	0	0
Lane Group Flow (vph)	0	217	0	0	267	21	0	178	2	0	239	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		16.2			16.2	16.2		9.8	9.8		9.8	
Effective Green, g (s)		17.2			17.2	17.2		10.8	10.8		10.8	
Actuated g/C Ratio		0.42			0.42	0.42		0.26	0.26		0.26	
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)		693			766	667		414	419		423	
v/s Ratio Prot												
v/s Ratio Perm		0.13			c0.15	0.01		0.11	0.00		c0.15	
v/c Ratio		0.31			0.35	0.03		0.43	0.00		0.57	
Uniform Delay, d1		7.9			8.0	6.9		12.4	11.0		13.0	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.3			0.3	0.0		0.7	0.0		1.7	
Delay (s)		8.1			8.3	6.9		13.2	11.0		14.7	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		8.1			8.1			13.1			14.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	40.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.51	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	918	1863	1801	1583
Volume (vph)	65	115	95	250	230	240
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	128	106	278	256	267
RTOR Reduction (vph)	0	70	0	0	0	0
Lane Group Flow (vph)	72	58	106	278	256	267
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	30.8	30.8	23.0	23.0	23.0	23.0
Effective Green, g (s)	31.8	31.8	24.0	24.0	24.0	24.0
Actuated g/C Ratio	0.45	0.45	0.34	0.34	0.34	0.34
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)	777	719	315	639	617	543
v/s Ratio Prot	c0.04	0.04		0.15	0.14	
v/s Ratio Perm			0.12			c0.17
v/c Ratio	0.09	0.08	0.34	0.44	0.41	0.49
Uniform Delay, d1	10.9	10.8	17.1	17.8	17.6	18.2
Progression Factor	1.27	2.97	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	2.9	2.2	0.5	0.7
Delay (s)	14.0	32.3	20.0	19.9	18.1	18.9
Level of Service	B	C	B	B	B	B
Approach Delay (s)	25.8			19.9	18.5	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↰	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		1.00			0.93			0.99		1.00	0.98	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1947			1832			1973		1711	1761	
Flt Permitted		0.71			0.98			0.99		0.51	1.00	
Satd. Flow (perm)		1410			1794			1953		927	1761	
Volume (vph)	35	50	0	10	55	80	10	235	10	110	175	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	56	0	11	61	89	11	261	11	122	194	33
RTOR Reduction (vph)	0	0	0	0	70	0	0	2	0	0	5	0
Lane Group Flow (vph)	0	95	0	0	91	0	0	281	0	122	222	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.6			7.6			29.0		39.6	39.6	
Effective Green, g (s)		8.6			8.6			30.0		40.6	40.6	
Actuated g/C Ratio		0.14			0.14			0.50		0.68	0.68	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		202			257			975		712	1190	
v/s Ratio Prot										0.02	c0.13	
v/s Ratio Perm		c0.07			0.05			c0.14		0.10		
v/c Ratio		0.47			0.35			0.29		0.17	0.19	
Uniform Delay, d1		23.7			23.2			8.8		4.0	3.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.7			0.8			0.2		0.1	0.1	
Delay (s)		25.4			24.1			9.0		4.1	3.7	
Level of Service		C			C			A		A	A	
Approach Delay (s)		25.4			24.1			9.0			3.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.93			0.98		1.00	1.00		1.00	0.98	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1712			1773		1770	3522		1770	3484	
Flt Permitted		0.87			0.67		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1504			1225		1770	3522		1770	3484	
Volume (vph)	35	45	90	170	105	60	200	595	20	115	865	100
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	50	100	189	117	67	222	661	22	128	961	111
RTOR Reduction (vph)	0	29	0	0	5	0	0	1	0	0	6	0
Lane Group Flow (vph)	0	160	0	0	368	0	222	682	0	128	1066	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		45.0			45.0		26.5	59.3		14.5	47.3	
Effective Green, g (s)		46.0			46.0		27.5	60.3		15.5	48.3	
Actuated g/C Ratio		0.33			0.33		0.20	0.43		0.11	0.34	
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)		494			403		348	1517		196	1202	
v/s Ratio Prot							c0.13	0.19		0.07	c0.31	
v/s Ratio Perm		0.11			c0.30							
v/c Ratio		0.32			0.91		0.64	0.45		0.65	0.89	
Uniform Delay, d1		35.3			45.1		51.7	28.1		59.7	43.3	
Progression Factor		1.00			0.61		1.04	0.72		1.00	1.00	
Incremental Delay, d2		0.4			22.9		3.6	0.9		7.6	8.2	
Delay (s)		35.7			50.3		57.2	21.1		67.3	51.5	
Level of Service		D			D		E	C		E	D	
Approach Delay (s)		35.7			50.3			30.0			53.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	43.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	79.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.89			0.97		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1641			1786		1770	3529		1770	3535	
Flt Permitted		0.94			0.89		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1560			1624		1770	3529		1770	3535	
Volume (vph)	5	0	25	45	65	25	85	790	15	10	1110	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	0	28	50	72	28	94	878	17	11	1233	11
RTOR Reduction (vph)	0	24	0	0	6	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	10	0	0	144	0	94	894	0	11	1244	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		17.1			17.1		12.7	98.5		3.2	89.0	
Effective Green, g (s)		18.1			18.1		13.7	99.5		4.2	90.0	
Actuated g/C Ratio		0.13			0.13		0.10	0.71		0.03	0.64	
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)		202			210		173	2508		53	2273	
v/s Ratio Prot							c0.05	0.25		0.01	c0.35	
v/s Ratio Perm		0.01			c0.09							
v/c Ratio		0.05			0.69		0.54	0.36		0.21	0.55	
Uniform Delay, d1		53.4			58.2		60.2	7.8		66.3	13.8	
Progression Factor		1.00			1.02		0.87	1.54		0.75	1.11	
Incremental Delay, d2		0.1			8.9		3.3	0.4		1.0	0.5	
Delay (s)		53.5			68.4		55.8	12.5		51.0	15.8	
Level of Service		D			E		E	B		D	B	
Approach Delay (s)		53.5			68.4			16.6			16.1	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.97			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780			1802		1770	3536		1770	3514	
Flt Permitted		0.86			0.87		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1541			1574		1770	3536		1770	3514	
Volume (vph)	35	75	35	15	55	15	80	835	5	5	1120	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	83	39	17	61	17	89	928	6	6	1244	61
RTOR Reduction (vph)	0	9	0	0	6	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	152	0	0	89	0	89	934	0	6	1303	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		17.7			17.7		11.6	99.5		1.6	89.5	
Effective Green, g (s)		18.7			18.7		12.6	100.5		2.6	90.5	
Actuated g/C Ratio		0.13			0.13		0.09	0.72		0.02	0.65	
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)		206			210		159	2538		33	2272	
v/s Ratio Prot							c0.05	0.26		0.00	c0.37	
v/s Ratio Perm		c0.10			0.06							
v/c Ratio		0.74			0.42		0.56	0.37		0.18	0.57	
Uniform Delay, d1		58.3			55.7		61.0	7.6		67.7	13.9	
Progression Factor		1.00			1.00		0.89	1.72		1.38	0.29	
Incremental Delay, d2		13.0			1.4		3.9	0.4		2.3	0.9	
Delay (s)		71.3			57.1		58.1	13.4		95.7	4.9	
Level of Service		E			E		E	B		F	A	
Approach Delay (s)		71.3			57.1			17.3			5.3	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	61.5%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1826	1583		1764		1770	3509		1770	3516	
Flt Permitted		0.85	1.00		0.44		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1576	1583		805		1770	3509		1770	3516	
Volume (vph)	60	90	115	50	10	10	155	845	50	15	1105	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	100	128	56	11	11	172	939	56	17	1228	56
RTOR Reduction (vph)	0	0	79	0	4	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	167	49	0	74	0	172	993	0	17	1282	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		19.2	19.2		19.2		17.6	96.4		3.2	82.0	
Effective Green, g (s)		20.2	20.2		20.2		18.6	97.4		4.2	83.0	
Actuated g/C Ratio		0.14	0.14		0.14		0.13	0.70		0.03	0.59	
Clearance Time (s)		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	
Lane Grp Cap (vph)		227	228		116		235	2441		53	2084	
v/s Ratio Prot							c0.10	0.28		0.01	c0.36	
v/s Ratio Perm		c0.11	0.03		0.09							
v/c Ratio		0.74	0.22		0.64		0.73	0.41		0.32	0.62	
Uniform Delay, d1		57.3	52.9		56.4		58.3	9.0		66.5	18.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.16	0.32	
Incremental Delay, d2		11.7	0.5		10.9		11.1	0.5		2.9	1.1	
Delay (s)		69.0	53.4		67.3		69.4	9.5		80.2	7.0	
Level of Service		E	D		E		E	A		F	A	
Approach Delay (s)		62.2			67.3			18.4			7.9	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	85	105	20	155	25	10	135	30	5	135	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	94	117	22	172	28	11	150	33	6	150	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	217	222	194	161
Volume Left (vph)	6	22	11	6
Volume Right (vph)	117	28	33	6
Hadj (s)	-0.28	-0.02	-0.06	0.02
Departure Headway (s)	4.9	5.2	5.3	5.4
Degree Utilization, x	0.30	0.32	0.28	0.24
Capacity (veh/h)	670	644	620	607
Control Delay (s)	10.0	10.6	10.3	10.1
Approach Delay (s)	10.0	10.6	10.3	10.1
Approach LOS	B	B	B	B

Intersection Summary			
Delay	10.3		
HCM Level of Service	B		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	70	55	55	140	5	60	165	40	5	220	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	78	61	61	156	6	67	183	44	6	244	33

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	222	294	283
Volume Left (vph)	6	61	67	6
Volume Right (vph)	61	6	44	33
Hadj (s)	-0.21	0.07	-0.01	-0.03
Departure Headway (s)	5.7	5.9	5.5	5.5
Degree Utilization, x	0.23	0.36	0.45	0.43
Capacity (veh/h)	536	556	610	613
Control Delay (s)	10.5	12.1	12.8	12.5
Approach Delay (s)	10.5	12.1	12.8	12.5
Approach LOS	B	B	B	B

Intersection Summary				
Delay			12.2	
HCM Level of Service			B	
Intersection Capacity Utilization		59.5%	ICU Level of Service	B
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	120	0	10	15	110	5	50	15	145	20	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	133	0	11	17	122	6	56	17	161	22	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	156	150	78	200
Volume Left (vph)	22	11	6	161
Volume Right (vph)	0	122	17	17
Hadj (s)	0.06	-0.44	-0.08	0.15
Departure Headway (s)	4.8	4.4	4.8	4.9
Degree Utilization, x	0.21	0.18	0.10	0.27
Capacity (veh/h)	691	762	684	691
Control Delay (s)	9.1	8.3	8.4	9.7
Approach Delay (s)	9.1	8.3	8.4	9.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay			9.0	
HCM Level of Service			A	
Intersection Capacity Utilization		35.4%	ICU Level of Service	A
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	10	80	5	35	20	300	30	15	365	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	11	89	6	39	22	333	33	17	406	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	878	853	408	850	839	350	411			367		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	878	853	408	850	839	350	411			367		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	98	98	66	98	94	98			99		
cM capacity (veh/h)	244	287	643	265	292	693	1148			1192		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	133	389	428
Volume Left	6	89	22	17
Volume Right	11	39	33	6
cSH	374	324	1148	1192
Volume to Capacity	0.06	0.41	0.02	0.01
Queue Length 95th (ft)	5	48	1	1
Control Delay (s)	15.2	23.6	0.7	0.5
Lane LOS	C	C	A	A
Approach Delay (s)	15.2	23.6	0.7	0.5
Approach LOS	C	C		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	105	65	270	45	50	375
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	117	72	300	50	56	417
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	853	325			350	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	838	256			284	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	60	90			95	
cM capacity (veh/h)	291	710			1160	

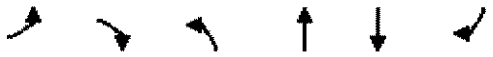
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	189	350	472
Volume Left	117	0	56
Volume Right	72	50	0
cSH	375	1700	1160
Volume to Capacity	0.50	0.21	0.05
Queue Length 95th (ft)	68	0	4
Control Delay (s)	23.9	0.0	1.4
Lane LOS	C		A
Approach Delay (s)	23.9	0.0	1.4
Approach LOS	C		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	35	35	325	25	15	310
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	39	361	28	17	344
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.94					
vC, conflicting volume	753	375			389	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	738	375			389	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	94			99	
cM capacity (veh/h)	358	671			1170	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	78	389	361
Volume Left	39	0	17
Volume Right	39	28	0
cSH	467	1700	1170
Volume to Capacity	0.17	0.23	0.01
Queue Length 95th (ft)	15	0	1
Control Delay (s)	14.2	0.0	0.5
Lane LOS	B		A
Approach Delay (s)	14.2	0.0	0.5
Approach LOS	B		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	15	10	70	345	310	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	11	78	383	344	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked						
vC, conflicting volume	903	364	383			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	903	364	383			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	98	93			
cM capacity (veh/h)	288	681	1175			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	28	461	383
Volume Left	17	78	0
Volume Right	11	0	39
cSH	374	1175	1700
Volume to Capacity	0.07	0.07	0.23
Queue Length 95th (ft)	6	5	0
Control Delay (s)	15.4	2.0	0.0
Lane LOS	C	A	
Approach Delay (s)	15.4	2.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1711	1829		1770	1785			1927			1730	
Flt Permitted	0.29	1.00		0.42	1.00			0.97			0.91	
Satd. Flow (perm)	524	1829		784	1785			1881			1580	
Volume (vph)	45	285	40	40	400	25	20	270	75	45	170	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	317	44	44	444	28	22	300	83	50	189	72
RTOR Reduction (vph)	0	7	0	0	3	0	0	8	0	0	9	0
Lane Group Flow (vph)	50	354	0	44	469	0	0	397	0	0	302	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	18.4	18.4		18.4	18.4			19.8			19.8	
Effective Green, g (s)	19.4	19.4		19.4	19.4			20.8			20.8	
Actuated g/C Ratio	0.37	0.37		0.37	0.37			0.39			0.39	
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)	192	669		287	653			738			620	
v/s Ratio Prot		0.19			c0.26							
v/s Ratio Perm	0.10			0.06				c0.21			0.19	
v/c Ratio	0.26	0.53		0.15	0.72			0.54			0.49	
Uniform Delay, d1	11.8	13.2		11.3	14.4			12.4			12.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.7	0.8		0.2	3.8			0.8			0.6	
Delay (s)	12.5	14.0		11.5	18.2			13.2			12.7	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		13.8			17.7			13.2			12.7	
Approach LOS		B			B			B			B	

Intersection Summary				
HCM Average Control Delay	14.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	68.6%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.96				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1868		1652	1720				
Flt Permitted	0.36	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	708	1739			1868		1652	1720				
Volume (vph)	20	295	0	0	430	60	110	175	75	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	328	0	0	478	67	122	194	83	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	16	0	0	0	0
Lane Group Flow (vph)	22	328	0	0	539	0	122	261	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	23.1	23.1			23.1		10.4	10.4				
Effective Green, g (s)	24.1	24.1			24.1		11.4	11.4				
Actuated g/C Ratio	0.53	0.53			0.53		0.25	0.25				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	372	913			981		410	427				
v/s Ratio Prot		0.19			c0.29			c0.15				
v/s Ratio Perm	0.03						0.07					
v/c Ratio	0.06	0.36			0.55		0.30	0.61				
Uniform Delay, d1	5.3	6.4			7.3		14.0	15.3				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.1	0.2			0.6		0.4	2.6				
Delay (s)	5.4	6.6			7.9		14.4	17.9				
Level of Service	A	A			A		B	B				
Approach Delay (s)		6.5			7.9			16.8			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	1540	1668		1711	1801	1531		1626		1652	1739	1583
Flt Permitted	0.50	1.00		0.64	1.00	1.00		0.69		0.73	1.00	1.00
Satd. Flow (perm)	804	1668		1161	1801	1531		1137		1265	1739	1583
Volume (vph)	30	155	5	45	285	115	10	25	5	105	240	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	172	6	50	317	128	11	28	6	117	267	72
RTOR Reduction (vph)	0	1	0	0	0	76	0	5	0	0	0	48
Lane Group Flow (vph)	33	177	0	50	317	52	0	40	0	117	267	24
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	18.8	18.8		19.7	19.7	19.7		6.0		16.3	16.3	16.3
Effective Green, g (s)	19.8	19.8		20.7	20.7	20.7		7.0		17.3	17.3	17.3
Actuated g/C Ratio	0.39	0.39		0.40	0.40	0.40		0.14		0.34	0.34	0.34
Clearance Time (s)	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
Lane Grp Cap (vph)	311	645		469	728	619		155		475	588	535
v/s Ratio Prot		0.11			c0.18					0.03	c0.15	
v/s Ratio Perm	0.04			0.04		0.03		0.04		0.05		0.02
v/c Ratio	0.11	0.27		0.11	0.44	0.08		0.26		0.25	0.45	0.05
Uniform Delay, d1	10.0	10.8		9.5	11.0	9.4		19.8		12.4	13.3	11.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		0.1	0.4	0.1		0.9		0.3	0.6	0.0
Delay (s)	10.2	11.0		9.6	11.4	9.5		20.7		12.6	13.8	11.4
Level of Service	B	B		A	B	A		C		B	B	B
Approach Delay (s)		10.9			10.7			20.7			13.1	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1735	1478	1486	1516			1834	1794	1593	1833	
Flt Permitted		0.98	1.00	0.65	1.00			0.89	1.00	0.62	1.00	
Satd. Flow (perm)		1711	1478	1019	1516			1667	1794	1044	1833	
Volume (vph)	5	145	45	15	245	65	60	135	20	25	45	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	161	50	17	272	72	67	150	22	28	50	6
RTOR Reduction (vph)	0	0	32	0	13	0	0	0	10	0	4	0
Lane Group Flow (vph)	0	167	18	17	331	0	0	217	12	28	52	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		14.0	14.0	14.0	14.0			12.7	12.7	12.7	12.7	
Effective Green, g (s)		15.0	15.0	15.0	15.0			13.7	13.7	13.7	13.7	
Actuated g/C Ratio		0.36	0.36	0.36	0.36			0.33	0.33	0.33	0.33	
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)		615	532	367	545			548	589	343	602	
v/s Ratio Prot					c0.22						0.03	
v/s Ratio Perm		0.10	0.01	0.02				c0.13	0.01	0.03		
v/c Ratio		0.27	0.03	0.05	0.61			0.40	0.02	0.08	0.09	
Uniform Delay, d1		9.5	8.7	8.7	10.9			10.8	9.5	9.7	9.7	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	0.0	0.1	1.9			0.5	0.0	0.1	0.1	
Delay (s)		9.7	8.7	8.7	12.9			11.3	9.5	9.8	9.7	
Level of Service		A	A	A	B			B	A	A	A	
Approach Delay (s)		9.5			12.7			11.1			9.7	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.98			1.00			1.00	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1808			1923			1854			2098	
Flt Permitted		0.92			0.96			0.98			0.99	
Satd. Flow (perm)		1697			1865			1827			2078	
Volume (vph)	15	30	5	5	20	5	15	280	5	5	150	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	33	6	6	22	6	17	311	6	6	167	6
RTOR Reduction (vph)	0	5	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	51	0	0	34	0	0	333	0	0	177	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		339			373			708			805	
v/s Ratio Prot												
v/s Ratio Perm		c0.03			0.02			c0.18			0.09	
v/c Ratio		0.15			0.09			0.47			0.22	
Uniform Delay, d1		26.4			26.1			18.4			16.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			0.5			2.2			0.6	
Delay (s)		27.3			26.6			20.6			17.0	
Level of Service		C			C			C			B	
Approach Delay (s)		27.3			26.6			20.6			17.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.97		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1858		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1858		
Volume (vph)	5	190	35	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	211	39	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	6	255	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	488		
v/s Ratio Prot	0.00	c0.14		
v/s Ratio Perm				
v/c Ratio	0.01	0.52		
Uniform Delay, d1	21.8	25.2		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.0	4.0		
Delay (s)	21.9	29.2		
Level of Service	C	C		
Approach Delay (s)		29.0		
Approach LOS		C		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791	1583		1796	1583	1770	3535		1770	3496	
Flt Permitted		0.75	1.00		0.75	1.00	0.32	1.00		0.33	1.00	
Satd. Flow (perm)		1404	1583		1399	1583	600	3535		616	3496	
Volume (vph)	60	15	95	15	5	30	75	765	5	40	570	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	17	106	17	6	33	83	850	6	44	633	56
RTOR Reduction (vph)	0	0	93	0	0	29	0	1	0	0	7	0
Lane Group Flow (vph)	0	84	13	0	23	4	83	855	0	44	682	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		6.5	6.5		6.5	6.5	38.5	38.5		29.8	29.8	
Effective Green, g (s)		6.5	6.5		6.5	6.5	38.5	38.5		29.8	29.8	
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.73	0.73		0.56	0.56	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		172	194		172	194	540	2568		346	1966	
v/s Ratio Prot							0.01	c0.24			0.19	
v/s Ratio Perm		c0.06	0.01		0.02	0.00	0.10			0.07		
v/c Ratio		0.49	0.07		0.13	0.02	0.15	0.33		0.13	0.35	
Uniform Delay, d1		21.7	20.6		20.7	20.5	2.4	2.6		5.5	6.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.2	0.1		0.4	0.0	0.1	0.1		0.2	0.1	
Delay (s)		23.9	20.7		21.1	20.5	2.6	2.7		5.6	6.4	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		22.1			20.7			2.7			6.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728	1478	1770	1906		1652	3296		1652	3265	
Flt Permitted		0.75	1.00	0.71	1.00		0.35	1.00		0.95	1.00	
Satd. Flow (perm)		1349	1478	1329	1906		614	3296		1652	3265	
Volume (vph)	50	10	255	15	5	10	90	965	15	10	595	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	11	283	17	6	11	100	1072	17	11	661	56
RTOR Reduction (vph)	0	0	252	0	10	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	67	31	17	7	0	100	1088	0	11	710	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		7.8	7.8	7.8	7.8		45.9	45.9		0.9	28.3	
Effective Green, g (s)		7.8	7.8	7.8	7.8		46.9	46.9		0.9	29.3	
Actuated g/C Ratio		0.11	0.11	0.11	0.11		0.67	0.67		0.01	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		150	164	148	212		685	2205		21	1365	
v/s Ratio Prot					0.00		0.04	c0.33		0.01	c0.22	
v/s Ratio Perm		c0.05	0.02	0.01			0.06					
v/c Ratio		0.45	0.19	0.11	0.03		0.15	0.49		0.52	0.52	
Uniform Delay, d1		29.1	28.3	28.0	27.8		5.3	5.7		34.4	15.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	0.2	0.1	0.0		0.4	0.8		10.4	1.4	
Delay (s)		29.9	28.5	28.2	27.8		5.8	6.5		44.8	16.6	
Level of Service		C	C	C	C		A	A		D	B	
Approach Delay (s)		28.8			28.0			6.5			17.0	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM Average Control Delay	13.5	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.47			
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	50.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1691			3539			3539	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1691			3539			3539	
Volume (vph)	0	0	0	1260	50	0	0	700	0	0	940	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1400	56	0	0	778	0	0	1044	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	709	747	0	0	778	0	0	1044	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.2	28.2			24.8			24.8	
Effective Green, g (s)				30.2	30.2			26.8			26.8	
Actuated g/C Ratio				0.46	0.46			0.41			0.41	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				781	786			1459			1459	
v/s Ratio Prot								0.22			c0.29	
v/s Ratio Perm				0.42	0.44							
v/c Ratio				0.91	0.95			0.53			0.72	
Uniform Delay, d1				16.1	16.7			14.4			15.9	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				14.2	20.9			0.4			1.7	
Delay (s)				30.3	37.5			14.8			17.6	
Level of Service				C	D			B			B	
Approach Delay (s)		0.0			34.0			14.8			17.6	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	110	0	10	155	10	20	330	45	5	145	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	122	0	11	172	11	22	367	50	6	161	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	128	194	439	183
Volume Left (vph)	6	11	22	6
Volume Right (vph)	0	11	50	17
Hadj (s)	0.04	0.01	-0.02	-0.01
Departure Headway (s)	6.0	5.8	5.2	5.6
Degree Utilization, x	0.21	0.32	0.63	0.28
Capacity (veh/h)	523	552	666	590
Control Delay (s)	10.7	11.5	16.5	10.7
Approach Delay (s)	10.7	11.5	16.5	10.7
Approach LOS	B	B	C	B

Intersection Summary			
Delay	13.6		
HCM Level of Service	B		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	80	5	355	185	5	385
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	89	6	394	206	6	428
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked						
vC, conflicting volume	936	497			600	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	936	497			600	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	99			99	
cM capacity (veh/h)	292	573			977	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	94	600	433
Volume Left	89	0	6
Volume Right	6	206	0
cSH	301	1700	977
Volume to Capacity	0.31	0.35	0.01
Queue Length 95th (ft)	33	0	0
Control Delay (s)	22.3	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	22.3	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	0	60	10	0	10	25	815	5	5	620	75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	0	67	11	0	11	28	906	6	6	689	83
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1261	1708	386	1386	1747	456	772			911		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1261	1708	386	1386	1747	456	772			911		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	100	89	87	100	98	97			99		
cM capacity (veh/h)	120	86	612	88	82	552	839			743		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	94	22	481	458	350	428
Volume Left	28	11	28	0	6	0
Volume Right	67	11	0	6	0	83
cSH	278	153	839	1700	743	1700
Volume to Capacity	0.34	0.15	0.03	0.27	0.01	0.25
Queue Length 95th (ft)	36	12	3	0	1	0
Control Delay (s)	24.5	32.6	0.9	0.0	0.2	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	24.5	32.6	0.5		0.1	
Approach LOS	C	D				

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	215	35	135	85	10	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	239	39	150	94	11	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			278		653	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			278		653	258
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		97	94
cM capacity (veh/h)			1285		382	780

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	278	244	61
Volume Left	0	150	11
Volume Right	39	0	50
cSH	1700	1285	656
Volume to Capacity	0.16	0.12	0.09
Queue Length 95th (ft)	0	10	8
Control Delay (s)	0.0	5.4	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	5.4	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD ALT2*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*LOCUST/LEDGE*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*550*	*280*	*0*	*440*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*611*	*311*	*0*	*488*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*65*	*0*	*15*	*85*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*72*	*0*	*16*	*94*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*0*			*72*			*110*
C (m) (vph)		*736*			*547*			*368*
v/c		*0.00*			*0.13*			*0.30*
95% queue length		*0.00*			*0.45*			*1.23*
Control Delay		*9.9*			*12.6*			*18.9*
LOS		*A*			*B*			*C*
Approach Delay	--	--	*12.6*			*18.9*		
Approach LOS	--	--	*B*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD ALT2*
Analysis Time Period	*AM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*60*	*490*	*0*	*0*	*455*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*66*	*544*	*0*	*0*	*505*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*180*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*200*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*66*				*200*			
C (m) (vph)	*1060*				*173*			
v/c	*0.06*				*1.16*			
95% queue length	*0.20*				*10.51*			
Control Delay	*8.6*				*170.7*			
LOS	*A*				*F*			
Approach Delay	--	--	*170.7*					
Approach LOS	--	--	*F*					

NULL ALTERNATIVE

2028 PM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1830	1583		1812	1583	1770	3499		1770	3521	
Flt Permitted		0.74	1.00		0.79	1.00	0.30	1.00		0.95	1.00	
Satd. Flow (perm)		1372	1583		1470	1583	552	3499		1770	3521	
Volume (vph)	20	35	80	95	75	205	90	975	80	85	840	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	39	89	106	83	228	100	1083	89	94	933	33
RTOR Reduction (vph)	0	0	74	0	0	102	0	0	0	0	0	0
Lane Group Flow (vph)	0	61	15	0	189	126	100	1172	0	94	966	0
Turn Type	Perm		Prot	Perm		pt+ov	Perm			custom		
Protected Phases		4	4		8	8 1		2		1	6	
Permitted Phases	4			8			2			1		
Actuated Green, G (s)		22.3	22.3		22.3	34.8	84.5	84.5		12.5	102.0	
Effective Green, g (s)		23.3	23.3		23.3	36.8	85.5	85.5		13.5	103.0	
Actuated g/C Ratio		0.17	0.17		0.17	0.26	0.61	0.61		0.10	0.74	
Clearance Time (s)		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	
Lane Grp Cap (vph)		228	263		245	416	337	2137		171	2590	
v/s Ratio Prot			0.01			0.08		c0.33		c0.05	0.27	
v/s Ratio Perm		0.04			c0.13		0.18					
v/c Ratio		0.27	0.06		0.77	0.30	0.30	0.55		0.55	0.37	
Uniform Delay, d1		50.9	49.1		55.8	41.3	13.0	16.0		60.3	6.7	
Progression Factor		1.00	1.00		1.00	1.00	0.31	0.37		1.00	1.00	
Incremental Delay, d2		0.6	0.1		13.9	0.4	1.9	0.9		3.6	0.4	
Delay (s)		51.5	49.2		69.7	41.7	6.0	6.8		63.9	7.2	
Level of Service		D	D		E	D	A	A		E	A	
Approach Delay (s)		50.1			54.4			6.7			12.2	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.88		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1829			1633		1770	3523		1770	3519	
Flt Permitted	0.32	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	600	1829			1623		1770	3523		1770	3519	
Volume (vph)	30	40	5	5	10	140	15	970	30	110	870	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	44	6	6	11	156	17	1078	33	122	967	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	33	50	0	0	173	0	17	1111	0	122	1006	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	19.7	19.7			19.7		3.4	84.6		14.5	95.7	
Effective Green, g (s)	20.7	20.7			20.7		4.4	85.6		15.5	96.7	
Actuated g/C Ratio	0.15	0.15			0.15		0.03	0.61		0.11	0.69	
Clearance Time (s)	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	
Lane Grp Cap (vph)	89	270			240		56	2154		196	2431	
v/s Ratio Prot		0.03					0.01	c0.32		c0.07	0.29	
v/s Ratio Perm	0.06				c0.11							
v/c Ratio	0.37	0.19			0.72		0.30	0.52		0.62	0.41	
Uniform Delay, d1	53.8	52.3			56.9		66.3	15.4		59.5	9.4	
Progression Factor	1.00	1.00			1.00		1.14	0.38		1.19	0.71	
Incremental Delay, d2	2.6	0.3			10.2		2.4	0.7		5.7	0.5	
Delay (s)	56.4	52.6			67.1		77.8	6.5		76.6	7.2	
Level of Service	E	D			E		E	A		E	A	
Approach Delay (s)		54.1			67.1			7.6			14.7	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frt		0.99			0.95			0.98		1.00	0.99	
Flt Protected		0.97			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1734			1666			3356		1711	3381	
Flt Permitted		0.69			0.77			1.00		0.95	1.00	
Satd. Flow (perm)		1226			1313			3356		1711	3381	
Volume (vph)	60	45	10	120	35	100	0	855	125	100	715	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	50	11	133	39	111	0	950	139	111	794	67
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	128	0	0	283	0	0	1089	0	111	861	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		32.8			32.8			72.9		13.1	91.0	
Effective Green, g (s)		33.8			33.8			73.9		14.1	92.0	
Actuated g/C Ratio		0.24			0.24			0.53		0.10	0.66	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		296			317			1771		172	2222	
v/s Ratio Prot								c0.32		c0.06	0.25	
v/s Ratio Perm		0.10			c0.22							
v/c Ratio		0.43			0.89			0.61		0.65	0.39	
Uniform Delay, d1		45.0			51.3			23.1		60.5	11.0	
Progression Factor		1.00			1.00			0.43		1.33	0.41	
Incremental Delay, d2		1.0			25.5			1.0		7.6	0.5	
Delay (s)		46.0			76.8			11.0		87.8	5.0	
Level of Service		D			E			B		F	A	
Approach Delay (s)		46.0			76.8			11.0			14.4	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	61.8%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.98			1.00	0.85		1.00	0.85		0.99	
Flt Protected		1.00			0.99	1.00		1.00	1.00		0.98	
Satd. Flow (prot)		1829			1837	1583		1855	1583		1814	
Flt Permitted		0.98			0.86	1.00		0.97	1.00		0.87	
Satd. Flow (perm)		1802			1604	1583		1800	1583		1604	
Volume (vph)	10	180	25	75	195	35	5	60	55	65	120	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	200	28	83	217	39	6	67	61	72	133	17
RTOR Reduction (vph)	0	0	0	0	0	21	0	0	46	0	0	0
Lane Group Flow (vph)	0	239	0	0	300	18	0	73	15	0	222	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8		8	4		
Actuated Green, G (s)		20.3			20.3	20.3		10.2	10.2		10.2	
Effective Green, g (s)		21.3			21.3	21.3		11.2	11.2		11.2	
Actuated g/C Ratio		0.47			0.47	0.47		0.25	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)		847			754	744		445	391		397	
v/s Ratio Prot												
v/s Ratio Perm		0.13			c0.19	0.01		0.04	0.01		c0.14	
v/c Ratio		0.28			0.40	0.02		0.16	0.04		0.56	
Uniform Delay, d1		7.3			7.8	6.4		13.4	13.0		14.9	
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		0.2			0.3	0.0		0.2	0.0		1.7	
Delay (s)		7.5			8.2	6.4		13.6	13.0		16.6	
Level of Service		A			A	A		B	B		B	
Approach Delay (s)		7.5			8.0			13.3			16.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1583	1711	1863	1801	1583
Flt Permitted	0.95	1.00	0.37	1.00	1.00	1.00
Satd. Flow (perm)	1711	1583	674	1863	1801	1583
Volume (vph)	155	65	160	95	435	190
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	172	72	178	106	483	211
RTOR Reduction (vph)	0	48	0	0	0	0
Lane Group Flow (vph)	172	24	178	106	483	211
Turn Type		Prot	Perm			Perm
Protected Phases	2	2		4	8	
Permitted Phases			4			8
Actuated Green, G (s)	45.8	45.8	78.0	78.0	78.0	78.0
Effective Green, g (s)	46.8	46.8	79.0	79.0	79.0	79.0
Actuated g/C Ratio	0.33	0.33	0.56	0.56	0.56	0.56
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)	572	529	380	1051	1016	893
v/s Ratio Prot	c0.10	0.02		0.06	c0.27	
v/s Ratio Perm			0.26			0.13
v/c Ratio	0.30	0.05	0.47	0.10	0.48	0.24
Uniform Delay, d1	34.5	31.5	18.1	14.1	18.2	15.3
Progression Factor	0.59	0.38	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	4.1	0.2	0.4	0.1
Delay (s)	21.2	11.9	22.2	14.3	18.5	15.5
Level of Service	C	B	C	B	B	B
Approach Delay (s)	18.5			19.2	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	52.9%	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		↔			↔			↔		↰	↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	14	12	12	14	12	11	11	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.92			0.97		1.00	0.98	
Flt Protected		0.99			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		1924			1815			1923		1711	1760	
Flt Permitted		0.83			0.96			0.93		0.62	1.00	
Satd. Flow (perm)		1625			1743			1800		1120	1760	
Volume (vph)	40	85	20	25	75	155	15	70	20	150	225	40
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	94	22	28	83	172	17	78	22	167	250	44
RTOR Reduction (vph)	0	8	0	0	77	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	152	0	0	206	0	0	106	0	167	287	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.9			10.9			12.9		24.4	24.4	
Effective Green, g (s)		11.9			11.9			13.9		25.4	25.4	
Actuated g/C Ratio		0.25			0.25			0.29		0.53	0.53	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		403			432			521		685	931	
v/s Ratio Prot										0.04	c0.16	
v/s Ratio Perm		0.09			c0.12			0.06		0.09		
v/c Ratio		0.38			0.48			0.20		0.24	0.31	
Uniform Delay, d1		15.0			15.4			12.9		6.2	6.4	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.6			0.8			0.2		0.2	0.2	
Delay (s)		15.6			16.2			13.1		6.4	6.5	
Level of Service		B			B			B		A	A	
Approach Delay (s)		15.6			16.2			13.1			6.5	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.92			0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1693			1724		1770	3519		1770	3497	
Flt Permitted		0.82			0.51		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1403			899		1770	3519		1770	3497	
Volume (vph)	105	95	310	155	55	140	135	745	30	95	690	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	117	106	344	172	61	156	150	828	33	106	767	67
RTOR Reduction (vph)	0	40	0	0	17	0	0	2	0	0	4	0
Lane Group Flow (vph)	0	527	0	0	372	0	150	859	0	106	830	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		57.0			57.0		17.7	48.3		13.5	44.1	
Effective Green, g (s)		58.0			58.0		18.7	49.3		14.5	45.1	
Actuated g/C Ratio		0.41			0.41		0.13	0.35		0.10	0.32	
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)		581			372		236	1239		183	1127	
v/s Ratio Prot							c0.08	0.24		0.06	c0.24	
v/s Ratio Perm		0.38			c0.41							
v/c Ratio		0.91			1.00		0.64	0.69		0.58	0.74	
Uniform Delay, d1		38.5			41.0		57.4	38.9		59.8	42.2	
Progression Factor		1.00			0.53		1.11	1.12		1.02	1.10	
Incremental Delay, d2		17.8			45.6		5.2	3.0		4.0	2.3	
Delay (s)		56.3			67.3		69.2	46.4		65.2	48.7	
Level of Service		E			E		E	D		E	D	
Approach Delay (s)		56.3			67.3			49.8			50.6	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM Average Control Delay	53.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.88			0.97		1.00	0.99		1.00	1.00	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1630			1752		1770	3519		1770	3537	
Flt Permitted		0.97			0.51		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1587			928		1770	3519		1770	3537	
Volume (vph)	10	0	80	45	10	15	5	885	35	5	1145	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	0	89	50	11	17	6	983	39	6	1272	6
RTOR Reduction (vph)	0	80	0	0	8	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	70	0	6	1021	0	6	1278	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		12.4			12.4		1.6	104.8		1.6	104.8	
Effective Green, g (s)		13.4			13.4		2.6	105.8		2.6	105.8	
Actuated g/C Ratio		0.10			0.10		0.02	0.76		0.02	0.76	
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)		152			89		33	2659		33	2673	
v/s Ratio Prot							c0.00	0.29		0.00	c0.36	
v/s Ratio Perm		0.01			c0.08							
v/c Ratio		0.13			0.78		0.18	0.38		0.18	0.48	
Uniform Delay, d1		58.0			61.9		67.7	5.9		67.7	6.5	
Progression Factor		1.00			0.84		1.02	0.43		1.06	0.62	
Incremental Delay, d2		0.4			34.9		2.4	0.4		1.5	0.3	
Delay (s)		58.3			87.1		71.7	2.9		73.2	4.4	
Level of Service		E			F		E	A		E	A	
Approach Delay (s)		58.3			87.1			3.3			4.8	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770			1805		1770	3536		1770	3518	
Flt Permitted		0.81			0.72		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1453			1326		1770	3536		1770	3518	
Volume (vph)	90	140	85	40	75	15	70	820	5	10	1210	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	156	94	44	83	17	78	911	6	11	1344	56
RTOR Reduction (vph)	0	10	0	0	4	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	340	0	0	140	0	78	917	0	11	1398	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		33.7			33.7		10.5	81.9		3.2	74.6	
Effective Green, g (s)		34.7			34.7		11.5	82.9		4.2	75.6	
Actuated g/C Ratio		0.25			0.25		0.08	0.59		0.03	0.54	
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)		360			329		145	2094		53	1900	
v/s Ratio Prot							c0.04	0.26		0.01	c0.40	
v/s Ratio Perm		c0.23			0.11							
v/c Ratio		0.95			0.43		0.54	0.44		0.21	0.74	
Uniform Delay, d1		51.7			44.3		61.7	15.7		66.3	24.6	
Progression Factor		1.00			1.00		0.88	1.46		1.16	0.70	
Incremental Delay, d2		33.2			0.9		3.5	0.6		1.8	2.3	
Delay (s)		84.9			45.2		57.9	23.5		78.5	19.6	
Level of Service		F			D		E	C		E	B	
Approach Delay (s)		84.9			45.2			26.2			20.0	
Approach LOS		F			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)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.98		1.00	0.98		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1792	1583		1779		1770	3480		1770	3517	
Flt Permitted		0.65	1.00		0.66		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1208	1583		1201		1770	3480		1770	3517	
Volume (vph)	75	20	130	90	45	20	110	800	100	10	1275	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	22	144	100	50	22	122	889	111	11	1417	61
RTOR Reduction (vph)	0	0	120	0	4	0	0	4	0	0	2	0
Lane Group Flow (vph)	0	105	24	0	168	0	122	996	0	11	1476	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		22.3	22.3		22.3		13.8	93.3		3.2	82.7	
Effective Green, g (s)		23.3	23.3		23.3		14.8	94.3		4.2	83.7	
Actuated g/C Ratio		0.17	0.17		0.17		0.11	0.67		0.03	0.60	
Clearance Time (s)		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	
Lane Grp Cap (vph)		201	263		200		187	2344		53	2103	
v/s Ratio Prot							c0.07	0.29		0.01	c0.42	
v/s Ratio Perm		0.09	0.02		c0.14							
v/c Ratio		0.52	0.09		0.84		0.65	0.42		0.21	0.70	
Uniform Delay, d1		53.3	49.4		56.5		60.1	10.4		66.3	19.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.27	0.22	
Incremental Delay, d2		2.4	0.2		25.3		7.9	0.6		1.3	1.3	
Delay (s)		55.7	49.5		81.9		68.0	11.0		85.3	5.7	
Level of Service		E	D		F		E	B		F	A	
Approach Delay (s)		52.1			81.9			17.2			6.3	
Approach LOS		D			F			B			A	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
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		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	135	80	40	165	15	15	100	15	25	165	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	150	89	44	183	17	17	111	17	28	183	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	244	244	144	239
Volume Left (vph)	6	44	17	28
Volume Right (vph)	89	17	17	28
Hadj (s)	-0.18	0.03	-0.01	-0.01
Departure Headway (s)	5.2	5.4	5.7	5.5
Degree Utilization, x	0.35	0.37	0.23	0.36
Capacity (veh/h)	634	614	564	603
Control Delay (s)	11.1	11.5	10.3	11.6
Approach Delay (s)	11.1	11.5	10.3	11.6
Approach LOS	B	B	B	B

Intersection Summary			
Delay	11.2		
HCM Level of Service	B		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	150	80	50	135	10	30	105	55	20	215	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	167	89	56	150	11	33	117	61	22	239	56

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	272	217	211	317
Volume Left (vph)	17	56	33	22
Volume Right (vph)	89	11	61	56
Hadj (s)	-0.15	0.05	-0.11	-0.06
Departure Headway (s)	5.7	6.0	5.9	5.7
Degree Utilization, x	0.43	0.36	0.34	0.50
Capacity (veh/h)	569	533	544	582
Control Delay (s)	13.1	12.5	11.9	14.4
Approach Delay (s)	13.1	12.5	11.9	14.4
Approach LOS	B	B	B	B

Intersection Summary			
Delay	13.1		
HCM Level of Service	B		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	70	5	10	105	90	5	20	15	115	50	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	78	6	11	117	100	6	22	17	128	56	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	89	228	44	189
Volume Left (vph)	6	11	6	128
Volume Right (vph)	6	100	17	6
Hadj (s)	0.01	-0.22	-0.17	0.15
Departure Headway (s)	4.8	4.4	4.7	4.9
Degree Utilization, x	0.12	0.28	0.06	0.25
Capacity (veh/h)	700	775	694	695
Control Delay (s)	8.4	9.1	8.0	9.5
Approach Delay (s)	8.4	9.1	8.0	9.5
Approach LOS	A	A	A	A

Intersection Summary			
Delay		9.0	
HCM Level of Service		A	
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	25	65	5	25	15	200	50	25	500	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	28	72	6	28	17	222	56	28	556	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	931	928	561	931	906	250	567			278		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	931	928	561	931	906	250	567			278		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	98	95	68	98	96	98			98		
cM capacity (veh/h)	228	258	527	224	266	789	1005			1285		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	44	106	294	594
Volume Left	11	72	17	28
Volume Right	28	28	56	11
cSH	361	279	1005	1285
Volume to Capacity	0.12	0.38	0.02	0.02
Queue Length 95th (ft)	10	42	1	2
Control Delay (s)	16.4	25.6	0.7	0.6
Lane LOS	C	D	A	A
Approach Delay (s)	16.4	25.6	0.7	0.6
Approach LOS	C	D		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	65	30	200	50	50	555
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	33	222	56	56	617
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			611			
pX, platoon unblocked						
vC, conflicting volume	978	250			278	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	978	250			278	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	73	96			96	
cM capacity (veh/h)	266	789			1285	

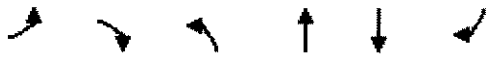
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	106	278	672
Volume Left	72	0	56
Volume Right	33	56	0
cSH	336	1700	1285
Volume to Capacity	0.31	0.16	0.04
Queue Length 95th (ft)	33	0	3
Control Delay (s)	20.5	0.0	1.1
Lane LOS	C		A
Approach Delay (s)	20.5	0.0	1.1
Approach LOS	C		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	30	20	245	15	5	455
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	22	272	17	6	506
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						667
pX, platoon unblocked	0.85					
vC, conflicting volume	797	281			289	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	761	281			289	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	97			100	
cM capacity (veh/h)	315	758			1273	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	56	289	511
Volume Left	33	0	6
Volume Right	22	17	0
cSH	411	1700	1273
Volume to Capacity	0.14	0.17	0.00
Queue Length 95th (ft)	12	0	0
Control Delay (s)	15.1	0.0	0.1
Lane LOS	C		A
Approach Delay (s)	15.1	0.0	0.1
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	35	5	30	205	440	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	6	33	228	489	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1089	959	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	806	511	533			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	773	430	456			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	99	96			
cM capacity (veh/h)	304	536	948			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	44	261	533
Volume Left	39	33	0
Volume Right	6	0	44
cSH	321	948	1700
Volume to Capacity	0.14	0.04	0.31
Queue Length 95th (ft)	12	3	0
Control Delay (s)	18.0	1.5	0.0
Lane LOS	C	A	
Approach Delay (s)	18.0	1.5	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	14	14	14	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1711	1839		1770	1785			1958			1768	
Flt Permitted	0.29	1.00		0.34	1.00			0.92			0.94	
Satd. Flow (perm)	525	1839		634	1785			1809			1670	
Volume (vph)	60	370	35	60	420	25	45	235	15	35	255	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	411	39	67	467	28	50	261	17	39	283	33
RTOR Reduction (vph)	0	5	0	0	3	0	0	2	0	0	3	0
Lane Group Flow (vph)	67	445	0	67	492	0	0	326	0	0	352	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	18.4	18.4		18.4	18.4			17.0			17.0	
Effective Green, g (s)	19.4	19.4		19.4	19.4			18.0			18.0	
Actuated g/C Ratio	0.39	0.39		0.39	0.39			0.36			0.36	
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)	203	711		245	690			649			599	
v/s Ratio Prot		0.24			c0.28							
v/s Ratio Perm	0.13			0.11				0.18			c0.21	
v/c Ratio	0.33	0.63		0.27	0.71			0.50			0.59	
Uniform Delay, d1	10.8	12.5		10.6	13.0			12.6			13.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.7		0.6	3.5			0.6			1.5	
Delay (s)	11.8	14.2		11.2	16.5			13.2			14.6	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		13.9			15.9			13.2			14.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.7%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	10	10	16	16	16	10	11	11	12	12	12
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1888	1739			1879		1652	1768				
Flt Permitted	0.35	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	699	1739			1879		1652	1768				
Volume (vph)	45	445	0	0	455	40	65	220	30	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	494	0	0	506	44	72	244	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	5	0	0	0	0
Lane Group Flow (vph)	50	494	0	0	546	0	72	272	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type	Perm						Perm					
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	22.8	22.8			22.8		10.3	10.3				
Effective Green, g (s)	23.8	23.8			23.8		11.3	11.3				
Actuated g/C Ratio	0.52	0.52			0.52		0.25	0.25				
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	366	910			983		410	439				
v/s Ratio Prot		0.28			c0.29			c0.15				
v/s Ratio Perm	0.07						0.04					
v/c Ratio	0.14	0.54			0.56		0.18	0.62				
Uniform Delay, d1	5.6	7.2			7.3		13.4	15.2				
Progression Factor	1.00	1.00			1.00		1.00	1.00				
Incremental Delay, d2	0.2	0.7			0.7		0.2	2.6				
Delay (s)	5.7	7.9			8.0		13.6	17.8				
Level of Service	A	A			A		B	B				
Approach Delay (s)		7.7			8.0			16.9			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	11	11	12	12	12	10	10	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1540	1657		1711	1801	1531		1583		1652	1739	1583
Flt Permitted	0.49	1.00		0.53	1.00	1.00		0.55		0.88	1.00	1.00
Satd. Flow (perm)	797	1657		961	1801	1531		880		1525	1739	1583
Volume (vph)	115	235	20	75	285	160	5	35	25	225	265	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	261	22	83	317	178	6	39	28	250	294	78
RTOR Reduction (vph)	0	3	0	0	0	110	0	24	0	0	0	51
Lane Group Flow (vph)	128	280	0	83	317	68	0	49	0	250	294	27
Parking (#/hr)	0	0	0				0	0	0			
Turn Type	Perm			Perm		Perm	Perm			pm+pt		Perm
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	18.6	18.6		18.3	18.3	18.3		4.8		16.7	16.7	16.7
Effective Green, g (s)	19.6	19.6		19.3	19.3	19.3		5.8		17.7	17.7	17.7
Actuated g/C Ratio	0.39	0.39		0.38	0.38	0.38		0.12		0.35	0.35	0.35
Clearance Time (s)	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
Lane Grp Cap (vph)	311	646		369	691	587		101		557	612	557
v/s Ratio Prot		0.17			c0.18					0.07	c0.17	
v/s Ratio Perm	0.16			0.09		0.04		0.06		0.09		0.02
v/c Ratio	0.41	0.43		0.22	0.46	0.12		0.49		0.45	0.48	0.05
Uniform Delay, d1	11.2	11.3		10.5	11.6	10.0		20.9		12.8	12.7	10.8
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5		0.3	0.5	0.1		3.7		0.6	0.6	0.0
Delay (s)	12.0	11.7		10.8	12.1	10.1		24.5		13.4	13.3	10.8
Level of Service	B	B		B	B	B		C		B	B	B
Approach Delay (s)		11.8			11.3			24.5			13.0	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	16	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97			1.00	0.85	1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1733	1478	1486	1513			1827	1794	1593	1829	
Flt Permitted		0.96	1.00	0.58	1.00			0.85	1.00	0.66	1.00	
Satd. Flow (perm)		1670	1478	905	1513			1583	1794	1104	1829	
Volume (vph)	15	210	75	55	230	65	55	85	55	100	110	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	233	83	61	256	72	61	94	61	111	122	17
RTOR Reduction (vph)	0	0	53	0	15	0	0	0	36	0	4	0
Lane Group Flow (vph)	0	250	30	61	313	0	0	155	25	111	135	0
Parking (#/hr)				0	0	0	0			0		
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)		10.9	10.9	10.9	10.9			13.9	13.9	13.9	13.9	
Effective Green, g (s)		11.9	11.9	11.9	11.9			14.9	14.9	14.9	14.9	
Actuated g/C Ratio		0.30	0.30	0.30	0.30			0.37	0.37	0.37	0.37	
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)		499	442	271	452			593	672	413	685	
v/s Ratio Prot					c0.21						0.07	
v/s Ratio Perm		0.15	0.02	0.07				0.10	0.01	c0.10		
v/c Ratio		0.50	0.07	0.23	0.69			0.26	0.04	0.27	0.20	
Uniform Delay, d1		11.5	10.0	10.5	12.3			8.6	7.9	8.7	8.4	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.8	0.1	0.4	4.6			0.2	0.0	0.4	0.1	
Delay (s)		12.3	10.1	10.9	16.9			8.9	7.9	9.0	8.5	
Level of Service		B	B	B	B			A	A	A	A	
Approach Delay (s)		11.7			16.0			8.6			8.8	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	14	14	14	12	12	12	16	16	16
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			1.00			0.99	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1808			1926			1852			2095	
Flt Permitted		0.94			0.89			0.97			0.99	
Satd. Flow (perm)		1715			1750			1804			2086	
Volume (vph)	15	45	10	20	30	5	15	230	5	5	285	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	50	11	22	33	6	17	256	6	6	317	17
RTOR Reduction (vph)	0	7	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	71	0	0	61	0	0	278	0	0	338	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		3			3			2			6	
Permitted Phases	3			3			2	2		6	6	
Actuated Green, G (s)		15.0			15.0			30.0			30.0	
Effective Green, g (s)		16.0			16.0			31.0			31.0	
Actuated g/C Ratio		0.20			0.20			0.39			0.39	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		343			350			699			808	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.03			0.15			c0.16	
v/c Ratio		0.21			0.17			0.40			0.42	
Uniform Delay, d1		26.7			26.5			17.7			17.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.1			1.7			1.6	
Delay (s)		28.1			27.6			19.4			19.5	
Level of Service		C			C			B			B	
Approach Delay (s)		28.1			27.6			19.4			19.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWL2	SWL	SWR	SWR2
Lane Configurations				
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Width	14	14	14	14
Total Lost time (s)	4.0	4.0		
Lane Util. Factor	1.00	1.00		
Frt	1.00	0.99		
Flt Protected	0.95	0.96		
Satd. Flow (prot)	1888	1879		
Flt Permitted	0.95	0.96		
Satd. Flow (perm)	1888	1879		
Volume (vph)	15	335	20	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	372	22	6
RTOR Reduction (vph)	0	1	0	0
Lane Group Flow (vph)	17	399	0	0
Turn Type	Split			
Protected Phases	4	4		
Permitted Phases				
Actuated Green, G (s)	20.0	20.0		
Effective Green, g (s)	21.0	21.0		
Actuated g/C Ratio	0.26	0.26		
Clearance Time (s)	5.0	5.0		
Lane Grp Cap (vph)	496	493		
v/s Ratio Prot	0.01	c0.21		
v/s Ratio Perm				
v/c Ratio	0.03	0.81		
Uniform Delay, d1	22.0	27.6		
Progression Factor	1.00	1.00		
Incremental Delay, d2	0.1	13.4		
Delay (s)	22.1	41.1		
Level of Service	C	D		
Approach Delay (s)		40.3		
Approach LOS		D		

Intersection Summary

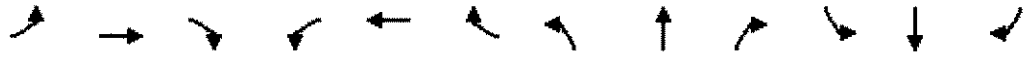
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1583		1795	1583	1770	3533		1770	3494	
Flt Permitted		0.74	1.00		0.76	1.00	0.21	1.00		0.29	1.00	
Satd. Flow (perm)		1385	1583		1419	1583	383	3533		534	3494	
Volume (vph)	55	15	130	30	10	15	100	890	10	45	810	75
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	17	144	33	11	17	111	989	11	50	900	83
RTOR Reduction (vph)	0	0	121	0	0	14	0	1	0	0	8	0
Lane Group Flow (vph)	0	78	23	0	44	3	111	999	0	50	975	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		9.0	9.0		9.0	9.0	39.9	39.9		31.2	31.2	
Effective Green, g (s)		9.0	9.0		9.0	9.0	39.9	39.9		31.2	31.2	
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.70	0.70		0.55	0.55	
Clearance Time (s)		4.0	4.0		4.0	4.0	3.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		219	250		224	250	383	2477		293	1916	
v/s Ratio Prot							0.02	c0.28			c0.28	
v/s Ratio Perm		c0.06	0.01		0.03	0.00	0.18			0.09		
v/c Ratio		0.36	0.09		0.20	0.01	0.29	0.40		0.17	0.51	
Uniform Delay, d1		21.4	20.5		20.8	20.2	3.9	3.5		6.4	8.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.2		0.4	0.0	0.4	0.1		0.3	0.2	
Delay (s)		22.4	20.6		21.2	20.2	4.3	3.6		6.7	8.3	
Level of Service		C	C		C	C	A	A		A	A	
Approach Delay (s)		21.2			21.0			3.7			8.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	16	12	10	10	10	10	10	10
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.90		1.00	1.00		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1747	1478	1770	1909		1652	3296		1652	3294	
Flt Permitted		0.78	1.00	0.71	1.00		0.26	1.00		0.95	1.00	
Satd. Flow (perm)		1400	1478	1323	1909		459	3296		1652	3294	
Volume (vph)	40	25	140	30	20	35	175	1045	15	40	840	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	28	156	33	22	39	194	1161	17	44	933	17
RTOR Reduction (vph)	0	0	140	0	35	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	72	16	33	26	0	194	1177	0	44	949	0
Turn Type	Perm		Perm	Perm			pm+pt			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)		6.8	6.8	6.8	6.8		42.0	42.0		3.5	28.5	
Effective Green, g (s)		6.8	6.8	6.8	6.8		43.0	43.0		3.5	29.5	
Actuated g/C Ratio		0.10	0.10	0.10	0.10		0.63	0.63		0.05	0.44	
Clearance Time (s)		4.0	4.0	4.0	4.0		5.0	5.0		4.0	5.0	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.5	1.0		1.0	1.0	
Lane Grp Cap (vph)		140	148	133	191		590	2090		85	1433	
v/s Ratio Prot					0.01		0.08	c0.36		0.03	c0.29	
v/s Ratio Perm		c0.05	0.01	0.02			0.13					
v/c Ratio		0.51	0.11	0.25	0.14		0.33	0.56		0.52	0.66	
Uniform Delay, d1		28.9	27.7	28.1	27.8		9.2	7.1		31.3	15.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3	0.1	0.4	0.1		1.5	1.1		2.2	2.4	
Delay (s)		30.3	27.9	28.5	27.9		10.7	8.2		33.5	17.6	
Level of Service		C	C	C	C		B	A		C	B	
Approach Delay (s)		28.6			28.1			8.5			18.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	14	12	12	12	12	12	12
Total Lost time (s)				4.0	4.0			4.0			4.0	
Lane Util. Factor				0.95	0.95			0.95			0.95	
Frt				1.00	1.00			1.00			1.00	
Flt Protected				0.95	0.96			1.00			1.00	
Satd. Flow (prot)				1681	1700			3539			3537	
Flt Permitted				0.95	0.96			1.00			1.00	
Satd. Flow (perm)				1681	1700			3539			3537	
Volume (vph)	0	0	0	1415	140	0	0	710	0	0	1320	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1572	156	0	0	789	0	0	1467	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	841	887	0	0	789	0	0	1472	0
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)				28.0	28.0			30.0			30.0	
Effective Green, g (s)				30.0	30.0			32.0			32.0	
Actuated g/C Ratio				0.43	0.43			0.46			0.46	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)				720	729			1618			1617	
v/s Ratio Prot								0.22			c0.42	
v/s Ratio Perm				0.50	0.52							
v/c Ratio				1.17	1.22			0.49			0.91	
Uniform Delay, d1				20.0	20.0			13.3			17.7	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				90.2	109.8			0.2			8.1	
Delay (s)				110.2	129.8			13.5			25.8	
Level of Service				F	F			B			C	
Approach Delay (s)		0.0			120.3			13.5			25.8	
Approach LOS		A			F			B			C	

Intersection Summary				
HCM Average Control Delay	64.3	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.06			
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	86.2%	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		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	165	60	35	125	15	20	275	55	50	260	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	183	67	39	139	17	22	306	61	56	289	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	272	194	389	372
Volume Left (vph)	22	39	22	56
Volume Right (vph)	67	17	61	28
Hadj (s)	-0.10	0.02	-0.05	0.02
Departure Headway (s)	6.9	7.2	6.4	6.5
Degree Utilization, x	0.52	0.39	0.69	0.67
Capacity (veh/h)	467	425	531	517
Control Delay (s)	17.0	14.8	22.7	22.0
Approach Delay (s)	17.0	14.8	22.7	22.0
Approach LOS	C	B	C	C

Intersection Summary			
Delay	20.0		
HCM Level of Service	C		
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	150	5	340	175	0	605
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	167	6	378	194	0	672
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						837
pX, platoon unblocked	0.92					
vC, conflicting volume	1147	475			572	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1160	475			572	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	16	99			100	
cM capacity (veh/h)	199	590			1001	

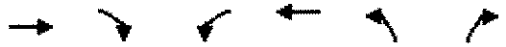
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	172	572	672
Volume Left	167	0	0
Volume Right	6	194	0
cSH	203	1700	1001
Volume to Capacity	0.85	0.34	0.00
Queue Length 95th (ft)	159	0	0
Control Delay (s)	77.8	0.0	0.0
Lane LOS	F		
Approach Delay (s)	77.8	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	9.5		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↑↔			↑↑↔	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	0	60	10	0	10	10	920	5	5	890	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	0	67	11	0	11	11	1022	6	6	989	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1267				
pX, platoon unblocked												
vC, conflicting volume	1561	2067	511	1619	2081	514	1022			1028		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1561	2067	511	1619	2081	514	1022			1028		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	62	100	87	81	100	98	98			99		
cM capacity (veh/h)	73	52	508	58	51	506	675			671		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	94	22	522	517	500	528
Volume Left	28	11	11	0	6	0
Volume Right	67	11	0	6	0	33
cSH	184	105	675	1700	671	1700
Volume to Capacity	0.51	0.21	0.02	0.30	0.01	0.31
Queue Length 95th (ft)	64	19	1	0	1	0
Control Delay (s)	43.5	48.4	0.5	0.0	0.2	0.0
Lane LOS	E	E	A		A	
Approach Delay (s)	43.5	48.4	0.2		0.1	
Approach LOS	E	E				

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	155	25	40	170	35	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	172	28	44	189	39	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				331		
pX, platoon unblocked						
vC, conflicting volume			200		464	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200		464	186
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	91
cM capacity (veh/h)			1372		538	856

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	200	233	117
Volume Left	0	44	39
Volume Right	28	0	78
cSH	1700	1372	715
Volume to Capacity	0.12	0.03	0.16
Queue Length 95th (ft)	0	3	15
Control Delay (s)	0.0	1.7	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	11.0
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/LOCUST/LEDGE*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD ALT2*
Analysis Time Period	*PM PEAK HOUR*		

Project Description *BURLINGTON*

East/West Street: *LOCUST/LEDGE* | North/South Street: *ROUTE 7*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*525*	*290*	*45*	*695*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*583*	*322*	*50*	*772*	*16*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*1*	*0*
Configuration		*T*	*TR*	*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*60*	*0*	*25*	*80*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*66*	*0*	*27*	*88*
Percent Heavy Vehicles	*0*	*0*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*1*	*0*
Configuration			*R*			*TR*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*R*			*TR*
v (vph)		*50*			*66*			*115*
C (m) (vph)		*747*			*555*			*180*
v/c		*0.07*			*0.12*			*0.64*
95% queue length		*0.21*			*0.40*			*3.66*
Control Delay		*10.2*			*12.4*			*54.9*
LOS		*B*			*B*			*F*
Approach Delay	--	--	*12.4*			*54.9*		
Approach LOS	--	--	*B*			*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EJD*	Intersection	*ROUTE 7/SOUTH WILLARD*
Agency/Co.	*CHA*	Jurisdiction	*TOWN OF BURLINGTON*
Date Performed	*12/22/05*	Analysis Year	*2028 BUILD ALT2*
Analysis Time Period	*PM PEAK HOUR*		
Project Description	*BURLINGTON*		
East/West Street:	*SOUTH WILLARD*	North/South Street:	*ROUTE 7*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*65*	*460*	*0*	*0*	*755*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*72*	*511*	*0*	*0*	*838*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*				*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*180*	*0*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*200*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*2*	*2*	*0*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
v (vph)	*72*				*200*			
C (m) (vph)	*796*				*107*			
v/c	*0.09*				*1.87*			
95% queue length	*0.30*				*16.24*			
Control Delay	*10.0*				*492.2*			
LOS	*A*				*F*			
Approach Delay	--	--	*492.2*					
Approach LOS	--	--	*F*					