MEMO

TO: Vermont Agency of Transportation (VTrans)

FROM: William Melendez, PE, PTOE
Richa Gotecha, EIT

SUBJECT: **REV 1: Sunderland Bridge #19-5 & Bridge #19-7 - Traffic Analysis Memorandum**

DATE: **May 31, 2024**
Revised: August 9, 2024

This traffic memorandum documents traffic operating conditions during the replacement of culverts 19-5 and 19-7 on US Route 7 in Sunderland, Vermont. It is currently anticipated that the culvert replacements for the 19-5 and 19-7 bridges will occur over separate, partial, and full closures. The full closure will be needed for construction activities to install the box culverts. To minimize the full closure window, (~7 days), certain activities can be accomplished with a one-way alternating traffic period leading up to the full closure period (~1 week) and following the shutdown period (~1 week).

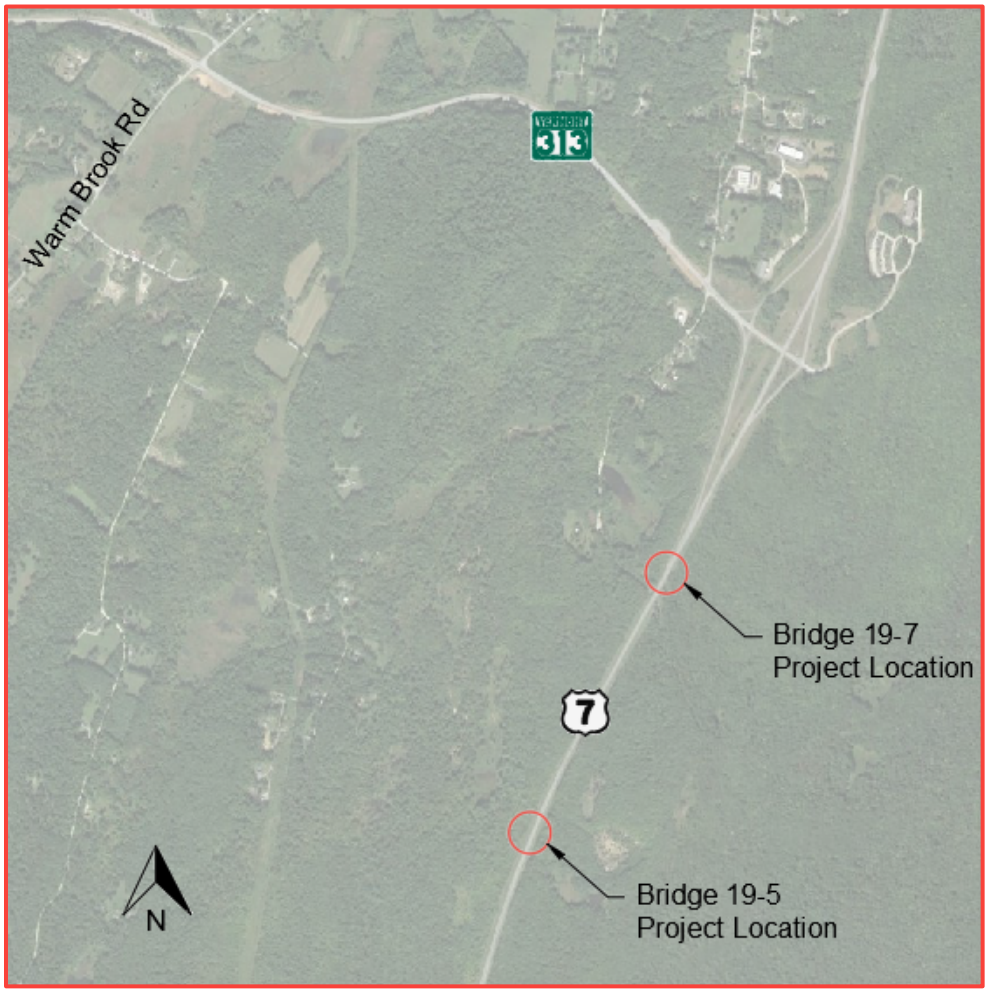


Figure 1: Locus Map

Two construction staging scenarios were analyzed:

1. **Full Closure** - During the full closure (~7 days), the traffic will be diverted onto VT Route 7A between the US Route 7 ramps in South Shaftsbury, and VT Route 313 in Arlington for an approximate 12-mile detour route. The main intersections along the detour route were evaluated to ensure that the additional traffic volume can be handled without modifications. The intersections that were evaluated include:

    - VT Route 7A & VT Route 313
    - VT Route 7A & VT Route 67
    - VT Route 7A & US Route 7 Ramps

    There is one overpass railroad bridge on VT Route 313 approximately 300' east of the VT 7A intersection with a vertical clearance of 14'.

2. **One-Way Alternating Traffic** – During the one-way alternating traffic, two temporary traffic signals were evaluated along US Route 7: one at each bridge location.

The traffic analysis determined the Level of Service (LOS), delays and queuing for each the three (3) main intersections along the detour route during the full closure as well as the LOS, delays, and queuing on US Route 7 during the one-way alternating traffic period.

TRAFFIC VOLUMES

The traffic data was obtained from the VTrans Traffic Data Management System, which included the hourly counts, counts date, and the most recent Average Annual Daily Traffic (AADT) from 2023. The data was collected at the following locations:

Turning Movement Counts

- VT Route 7A & US Route 7 Ramps intersection – collected in 2018
- VT Route 7A & VT Route 67 intersection – collected in 2018
- VT Route 7A & VT Route 313 intersection – collected in 2018

Interchange Ramp Counts

- US Route 7 SB off-ramp to VT Route 313 – collected in 2017, and estimated 2023 AADT
- US Route 7 SB on-ramp from VT Route 313 – collected in 2017, and estimated 2023 AADT
- US Route 7 NB off-ramp to VT Route 313 – collected in 2017, and estimated 2023 AADT
- US Route 7 NB on-ramp from VT Route 313 – collected in 2017, and estimated 2023 AADT
- US Route 7 SB off-ramp to VT Route 7A – collected in 2021, and estimated 2023 AADT
- US Route 7 SB on-ramp from VT Route 7A – collected in 2021, and estimated 2023 AADT
- US Route 7 NB off-ramp to VT Route 7A – collected in 2021, and estimated 2023 AADT
- US Route 7 NB on-ramp from VT Route 7A – collected in 2021, and estimated 2023 AADT

Mainline Counts

- US Route 7, north of VT 313 – collected in 2023

Based on the US Route 7 count station located north of VT Route 313, the US Route 7 mainline traffic data is summarized in **Figure 2**.

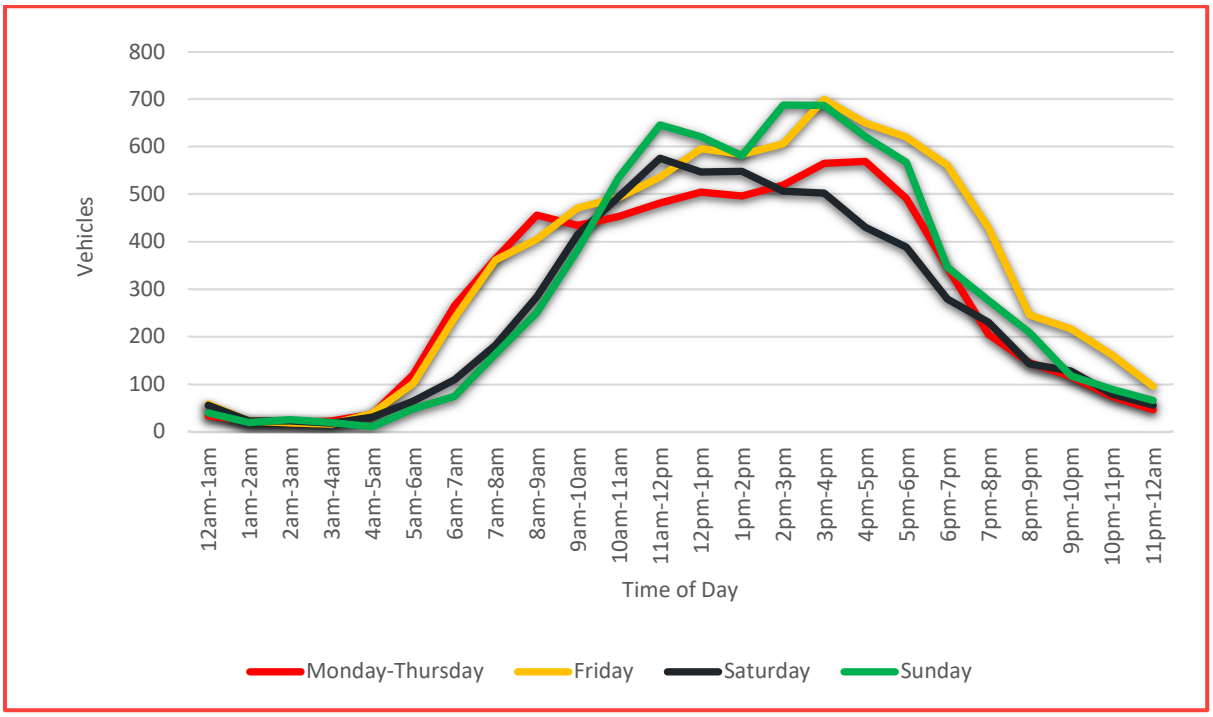


Figure 2: US Route 7 Daily Traffic

Weekday (Monday-Thursday) daily traffic on US Route 7 is approximately 6,781 vehicles per day, with a distribution of 52% northbound and 48% southbound. Friday daily traffic is approximately 8,222 vehicles per day, with a distribution of 56% northbound and 44% southbound. Saturday daily traffic is approximately 6,105 vehicles per day, with a distribution of 52% northbound and 48% southbound. Sunday daily traffic is approximately 7,079 vehicles per day, with a distribution of 44% northbound and 56% southbound.

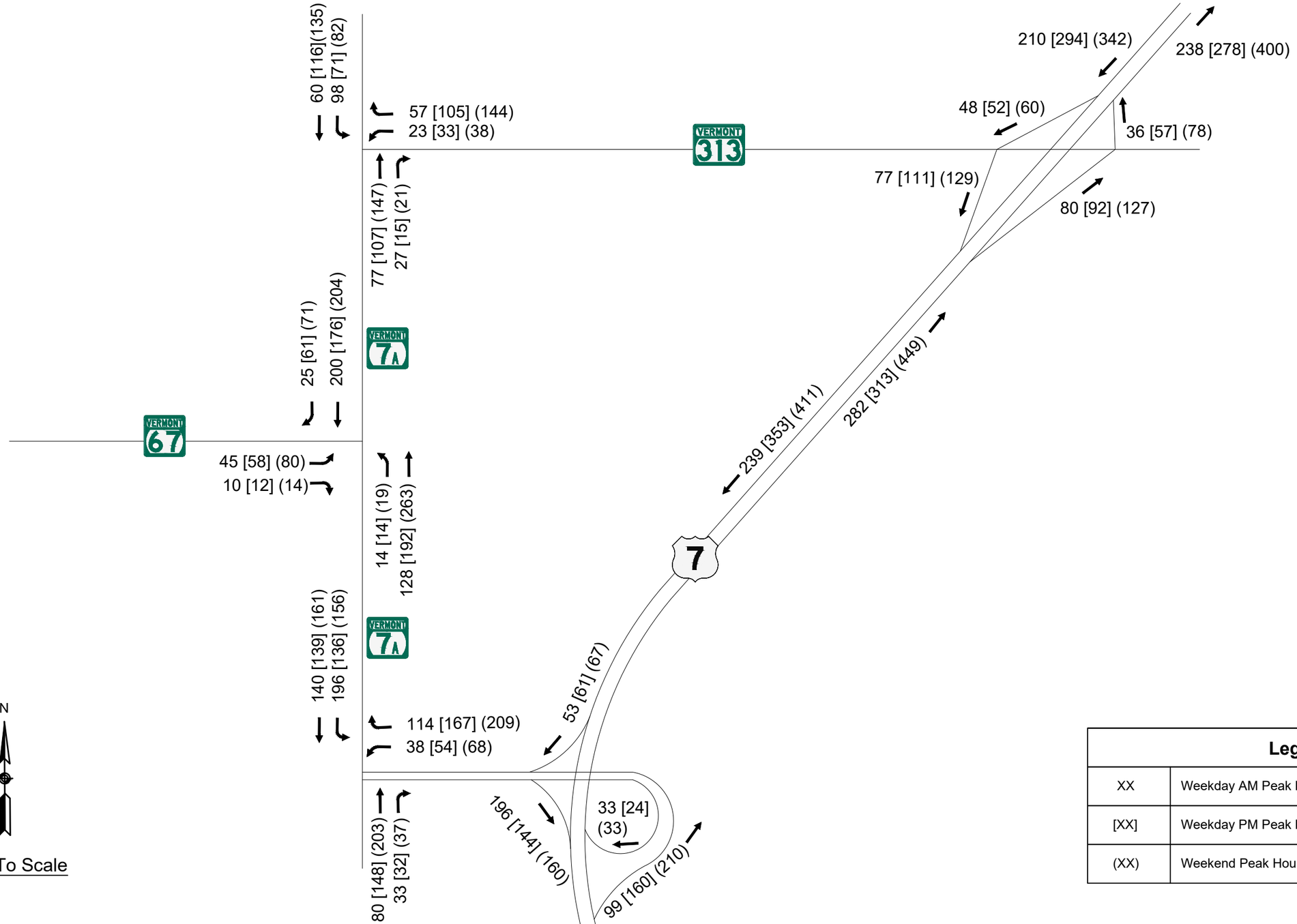
The full closure/detour is expected to last a week, hence, the weekday traffic volumes were assumed to be the average from Monday through Thursday, while the weekend traffic volumes were assumed to be the highest volumes recorded between Friday, Saturday, and Sunday. Friday volumes are 35% higher than Saturday and 16% higher than Sunday, and Friday PM peak is the period with the highest volumes. Therefore, Friday afternoon was selected as the Weekend Peak.

The turning movement counts and four of the ramp counts were collected before COVID and traffic volumes have changed since then. The traffic patterns from the older counts were used along with the 2023 AADT to get an estimate of the 2023 hourly counts for each of the ramps. The resulting ramp counts and the older turning movement counts patterns were then used to estimate the 2023 turning movement counts.

Growth rates and seasonal factors were applied by the methodology outlined in the VTrans Redbook[1] to develop the Existing 2024 AM peak, PM peak, and Weekend peak traffic volumes.

Figure 3 shows the Existing 2024 traffic volumes that served as the baseline to conduct traffic operational analyses in this memorandum.

[1] https://vtrans.vermont.gov/sites/aot/files/planning/documents/trafficresearch/Redbook2020.pdf



Not To Scale

Legend	
XX	Weekday AM Peak Hour Volumes
[XX]	Weekday PM Peak Hour Volumes
(XX)	Weekend Peak Hour Volumes

FIGURE 3
2024 EXISTING TRAFFIC VOLUMES

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Sunderland, VT
VT ROUTE 7A/US ROUTE 7

TRAFFIC OPERATIONAL ANALYSIS

The traffic operations were analyzed based on methodologies outlined in the Highway Capacity Manual (HCM) 6th Edition. Trafficware's Synchro 11/SimTraffic software was used to perform the traffic analysis. Synchro/SimTraffic implements the methods outlined in the HCM and provides delay/vehicle and queue lengths results.

The level of service (LOS) is a calculation of control delay for an intersection. LOS is an indication of drive discomfort, frustration, fuel consumption, and lost time. LOS is defined by an index from A through F, with A being the best and F being the worst. The HCM lists the following definitions for each grade:

- A = Free flow
- B = Reasonably free flow
- C = Stable flow
- D = Approaching unstable flow
- E = Unstable flow
- F = Forced flow, volume is greater than capacity

All three (3) main intersections along the detour route are unsignalized, while the one-way alternating traffic will be implemented by a temporary signal. The LOS for a signalized intersection is defined in terms of a weighted average control delay for the entire intersection. The LOS for the two-way stop-controlled (TWSC) intersection is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left turns. Capacity is a measurement of the ability of an intersection to accommodate all movements within the intersection. Delay is the measure of the user quality of service.

The LOS assignments for signalized intersections as compared to delay values are shown in **Table 1**.

Table 1: Signalized Intersection Level of Service Criteria

Level of Service	Average Delay (seconds)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

The LOS assignments for TWSC intersections as compared to delay values are shown in **Table 2**.

Table 2: TWSC Intersection Level of Service Criteria

Level of Service	Average Delay (seconds)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

FULL CLOSURE

WSP evaluated the intersection operations for each of the three (3) main intersections along the detour route under the existing conditions and during the full closure for the AM peak, PM peak and Weekend peak hours. **Figure 4** shows the detour route and the intersections evaluated. **Figure 5** shows the estimated traffic volumes along the detour route during full closure.

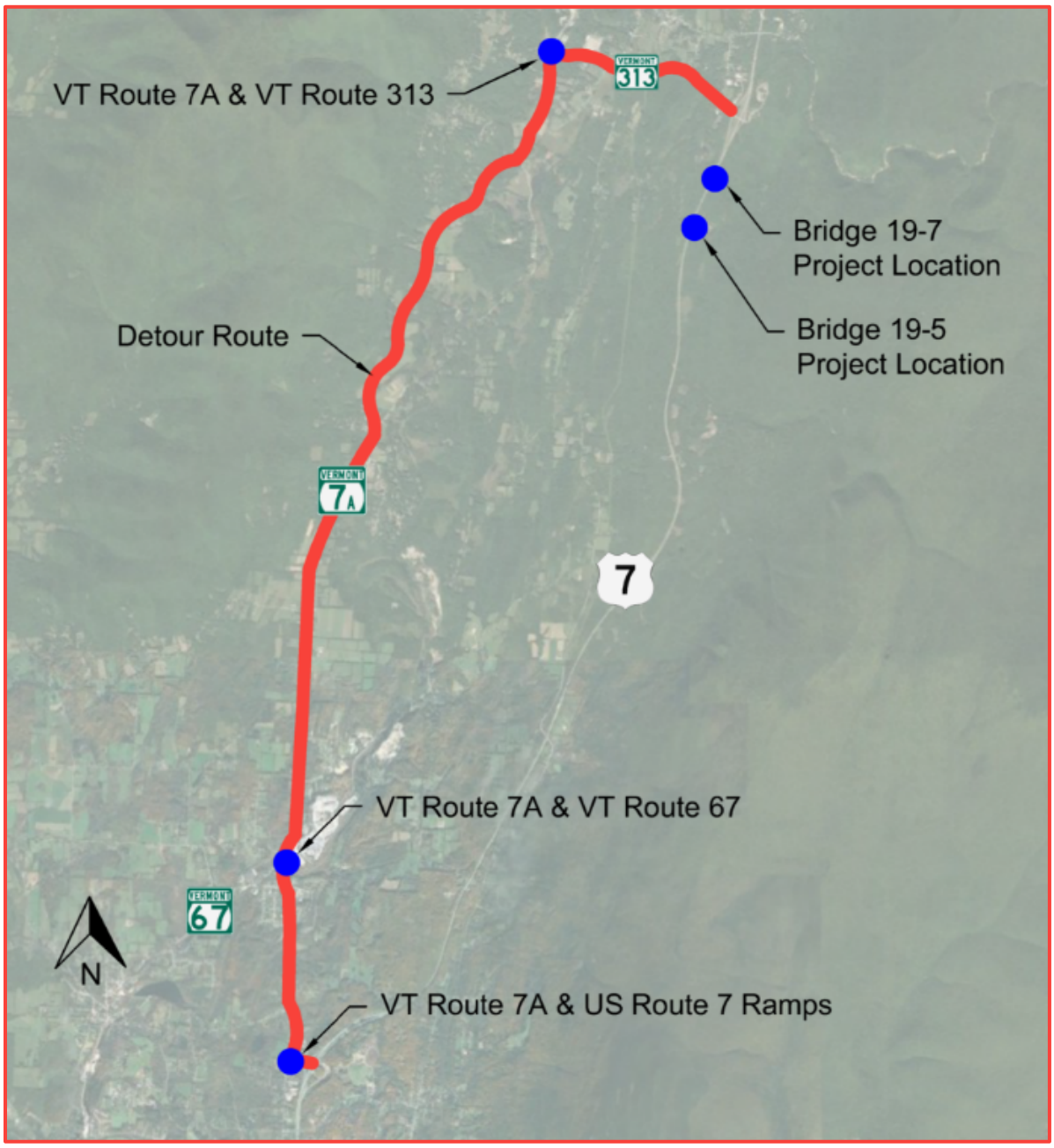
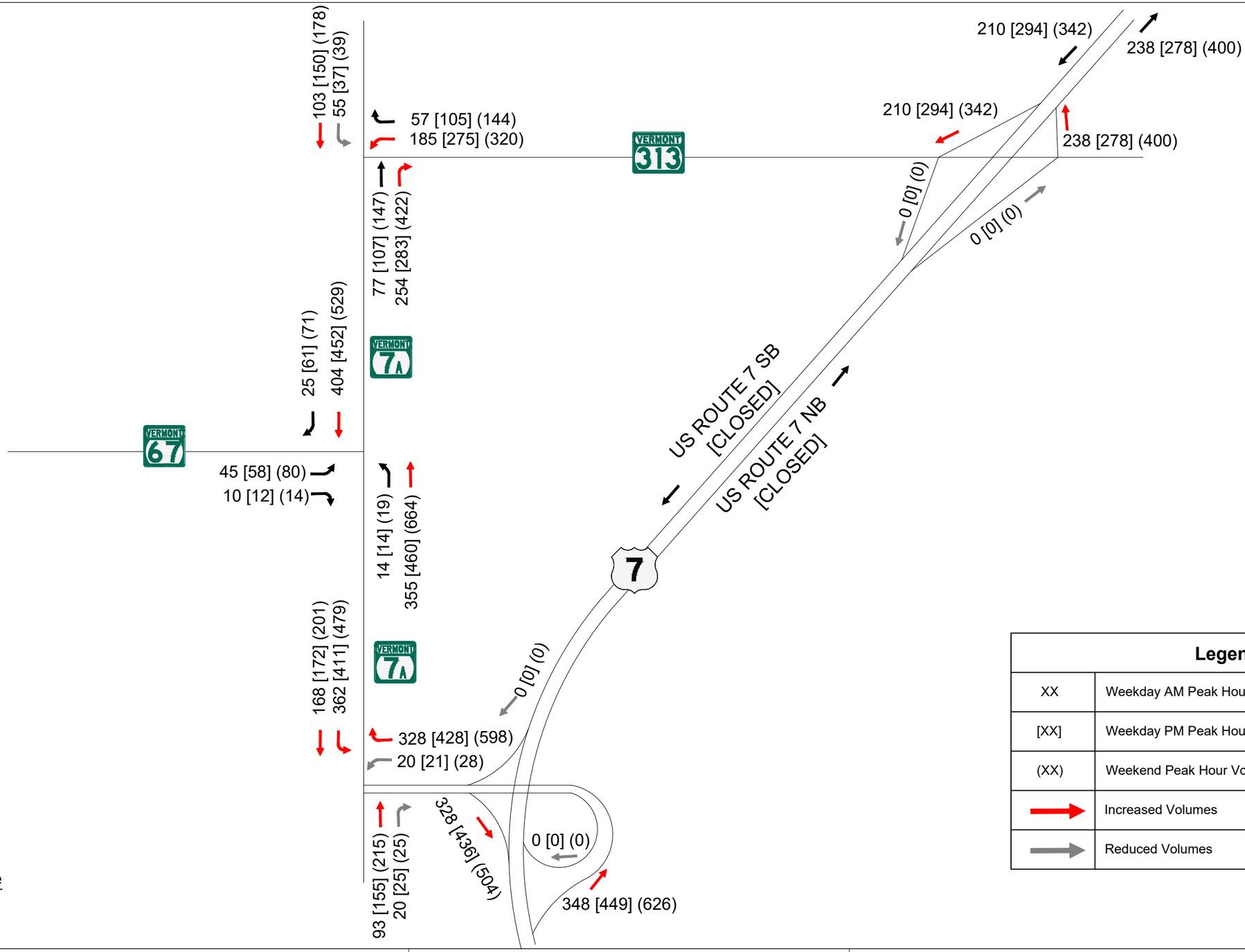


Figure 4: Detour Route & Intersections Analyzed



Legend	
XX	Weekday AM Peak Hour Volumes
[XX]	Weekday PM Peak Hour Volumes
(XX)	Weekend Peak Hour Volumes
→	Increased Volumes
→	Reduced Volumes

FIGURE 5
FULL CLOSURE TRAFFIC VOLUMES

wsp

Sunderland, VT
VT ROUTE 7A/US ROUTE 7

During the full closure, approximately 282 and 239 vehicles are diverted from US Route 7 in the AM peak hour in the northbound and southbound directions, respectively. In the PM peak, 313 and 353 vehicles are diverted in the northbound and southbound directions, respectively. In the Weekend Peak, 449 and 411 vehicles are diverted in the northbound and southbound directions, respectively.

The intersections along the detour route were analyzed under the Existing and Full Closure (Detour) condition. The results of the intersection capacity analyses for each of the study intersections for AM peak hour, the PM peak hour and the Weekend peak hour are shown in **Table 3** through **Table 5**.

Table 3: AM Peak Traffic Operational Results – Full Closure

Intersection	Movement	Existing			Full Closure (Detour)		
		Delay (s)	95th Queue (ft)	LOS	Delay (s)	95th Queue (ft)	LOS
VT Route 7A & VT Route 313	NB T	0	<25	A	0	<25	A
	NB R	0	<25	A	0	<25	A
	SB L/T	7.9	<25	A	8.5	<25	A
	WB L	12.4	<25	B	16.0	55	C
	WB R	9.4	<25	A	9.4	<25	A
VT Route 7A & VT Route 67	NB L/T	7.8	<25	A	8.4	<25	A
	SB T/R	0	<25	A	0	<25	A
	EB L/R	12.4	<25	B	21.0	25	C
VT Route 7 & US Route 7 Ramps	NB T	0	<25	A	0	<25	A
	NB R	0	<25	A	0	<25	A
	SB L	8.2	<25	A	8.9	40	A
	SB T	0	<25	A	0	<25	A
	WB L	17.5	<25	C	34.2	<25	D
	WB R	9.6	<25	A	12.4	65	B

Table 4: PM Peak Traffic Operational Results – Full Closure

Intersection	Movement	Existing			Full Closure (Detour)		
		Delay (s)	95th Queue (ft)	LOS	Delay (s)	95th Queue (ft)	LOS
VT Route 7A & VT Route 313	NB T	0	<25	A	0	<25	A
	NB R	0	<25	A	0	<25	A
	SB L/T	7.7	<25	A	8.6	<25	A
	WB L	12.2	<25	B	29.6	188	D
	WB R	9.7	<25	A	9.7	<25	A
VT Route 7A & VT Route 67	NB L/T	8.1	<25	A	9.3	<25	A
	SB T/R	0	<25	A	0	<25	A
	EB L/R	13.1	<25	B	30.6	45	D
VT Route 7 & US Route 7 Ramps	NB T	0	<25	A	0	<25	A
	NB R	0	<25	A	0	<25	A
	SB L	8.0	<25	A	8.9	38	A
	SB T	0	<25	A	0	<25	A
	WB L	14.6	<25	B	33.6	<25	D
	WB R	10.3	<25	B	14.7	95	B

Table 5: Weekend Peak Traffic Operational Results – Full Closure

Intersection	Movement	Existing			Full Closure (Detour)		
		Delay (s)	95th Queue (ft)	LOS	Delay (s)	95th Queue (ft)	LOS
VT Route 7A & VT Route 313	NB T	0	<25	A	0	<25	A
	NB R	0	<25	A	0	<25	A
	SB L/T	7.8	<25	A	9.5	<25	A
	WB L	13.5	<25	B	**74.4**	**380**	**F**
	WB R	10.4	<25	B	10.4	<25	B
VT Route 7A & VT Route 67	NB L/T	8.3	<25	A	9.8	<25	A
	SB T/R	0	<25	A	0	<25	A
	EB L/R	16.0	28	C	**105.6**	**145**	**F**
VT Route 7 & US Route 7 Ramps	NB T	0	<25	A	0	<25	A
	NB R	0	<25	A	0	<25	A
	SB L	8.2	<25	A	9.7	50	A
	SB T	0	<25	A	0	<25	A
	WB L	17.7	<25	C	**60.6**	**38**	**F**
	WB R	11.3	33	B	32.4	285	D

The results show a significant increase in delay and LOS for the westbound left turn movement at VT Route 7A & US Route 7 Ramps intersection, the eastbound approach from VT Route 67 at the VT Route 7A & VT Route 67 intersection, and the westbound left movement at the VT Route 7A & VT Route 313 intersection. Because of the estimated poor conditions at these intersections, WSP recommends installing a temporary signal at the three intersections. If temporary signals are installed at these intersections, the delays would be reduced as shown in **Table 6**.

Table 6: Temporary Signal Results

Intersection	Movement	AM Peak			PM Peak			Weekend Peak		
		Delay (s)	95th Queue (ft)	LOS	Delay (s)	95th Queue (ft)	LOS	Delay (s)	95th Queue (ft)	LOS
VT Route 7A & VT Route 313	NB T	8.2	30	A	14.5	66	B	16.6	87	B
	NB R	2.5	<25	A	5.3	<25	A	7.4	<25	A
	SB L/T	8.9	60	A	16.3	113	B	18.9	130	B
	WB L	22.5	94	C	22.1	102	C	24.8	122	B
	WB R	5.7	<25	A	2.7	<25	A	2.5	<25	A
VT Route 7A & VT Route 67	NB L/T	5.7	117	A	5.8	148	A	8.6	233	A
	SB T/R	5.7	133	A	6.8	160	A	8.5	178	A
	EB L/R	19.4	35	B	19.1	43	B	26.2	67	C
VT Route 7 & US Route 7 Ramps	NB T	14.6	58	B	23.4	110	C	20.5	129	C
	NB R	7.0	<25	A	9.5	<25	A	7.4	<25	A
	SB L	16.5	128	B	12.4	159	B	16.5	186	B
	SB T	5.5	57	A	6.1	60	B	6.0	60	A
	WB L	19.1	<25	B	18.1	<25	B	20.1	26	B
	WB R	10.4	<25	B	9.5	47	A	14.5	72	B

ALTERNATING ONE-WAY TRAFFIC ANALYSIS

WSP analyzed alternating one-way traffic on US Route 7 to facilitate construction. The AM peak, PM peak, and Weekend peak conditions were analyzed in Synchro 11 software to represent typical traffic conditions at this location. Alternating one-way traffic was modeled with a two-phase traffic control signal and a 120 second cycle length for the three peak periods. A 27 second all-red clearance interval was used for traffic to clear the crossover. **Table 7** shows the analysis results. Detailed Synchro reports can be found in the appendix.

Table 7: US Route 7 Alternating One-Way Traffic Analysis

Peak Period	Lane Group	Traffic Volume	v/c Ratio	Delay (s)	LOS	95th Queue (ft)
AM Peak	NB thru	282	0.64	46.9	D	313
	SB Thru	239	0.57	45.8	D	268
	Overall	-	0.64	46.4	D	-
PM Peak	NB Thru	313	0.76	54.9	D	#374
	SB Thru	353	0.79	54.7	D	#422
	Overall	-	0.79	54.8	D	-
Weekend Peak	NB Thru	449	**0.98**	**84.3**	**F**	**#557**
	SB Thru	411	**1.03**	**91.9**	**F**	**#612**
	Overall	-				

The average delay resulted in a LOS of D and LOS of D for both northbound and southbound approaches during the AM peak and PM peak periods. However, the Weekend peak period experiences significant delays and queues extending to around 600' or approximately 24 vehicles. Although Friday daily volumes are 35% higher than Saturday and 16% higher than Sunday, specific hourly volumes are similar between Friday and Sunday, especially during the afternoon hours, as shown in **Figure 2**. Therefore, WSP does not recommend implementing alternating one-way traffic during the weekend.

VEHICLE TURNING PATH ANALYSIS

A vehicle turning path analysis was performed for the main two intersection along the detour route utilizing a WB-62 design vehicle: (1) VT Route 7A & VT Route 313 intersection, and (2) VT Route 7A & US Route 7 Ramps to ensure that trucks can maneuver along the proposed detour route.

Figure 6 shows the VT Route 7A & US Route 7 Ramps intersection.

Figure 6: VT Route 7A & US Route 7 Ramps Vehicle Path Analysis

The figure shows the WB-62 design vehicle successfully navigating both the westbound right turn and northbound right turn movements while staying within the existing pavement width.

Figure 7 shows the VT Route 7A & VT Route 313 intersection.

Figure 7: VT Route 7A & VT Route 313 Vehicle Path Analysis

The figure shows the WB-62 design vehicle successfully navigating both the westbound left turn and the northbound right turn movements within the existing pavement widths without any conflicts.

SUMMARY OF FINDINGS

WSP has completed a construction stage traffic analysis to support the replacement of culverts #19-5 and #19-7 which included two scenarios: a full closure of the highway with a detour evaluation for US Route 7, as well as a single lane closure with a one-way alternating traffic on US Route 7.

A full road closure with a detour along VT Route 313 and VT Route 7A would increase the delays for the westbound left turns at the VT Route 313 & VT Route 7A intersection and the VT Route 7A & US Route 7 Ramps intersection as well as the eastbound approach at the VT Route 7A & VT Route 67 intersection. These intersections are unsignalized, therefore, the additional traffic would have a harder time to find a gap and proceed through the intersection. Because of this, WSP recommends installing temporary traffic signals at these three intersections to reduce delays and avoid any safety concerns. WSP also recommends installing advanced warning signs on VT Route 7A to inform drivers of the new traffic controls at these intersections. Standard lane closures should be implemented along US Route 7 following VTrans Standard Drawing T-20 (Temporary Termination of Expressway & Facilities) so that motorists understand they will need to take the next exit.

The single lane closure with one-way alternating traffic would operate at acceptable conditions with LOS D, during the AM and PM peak hours. However, it is expected that significant delays would occur during the weekend. WSP recommends alternating one-way traffic to be implemented only during the weekdays (Monday-Thursday). A smart workzone setup to warn drivers of the full roadway closure and delays through the workzone should be considered.

Advanced message boards should inform drivers well in advance, and standard lane closures should be implemented so that motorists understand they will need to come to a complete stop through the work zone.

The vehicle turning path analysis concludes that no additional pavement or accommodations are required for the two main intersections.

APPENDIX

A SYNCHRO REPORTS

Intersection	
Int Delay, s/veh	6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	114	80	33	196	140
Future Vol, veh/h	38	114	80	33	196	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	0	-	0	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	1
Peak Hour Factor	77	74	84	79	74	92
Heavy Vehicles, %	2	12	3	2	9	4
Mvmt Flow	49	154	95	42	265	152

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	777	95	0	0	137	0
Stage 1	95	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Critical Hdwy	5.82	6.02	-	-	4.19	-
Critical Hdwy Stg 1	4.82	-	-	-	-	-
Critical Hdwy Stg 2	4.82	-	-	-	-	-
Follow-up Hdwy	3.518	3.408	-	-	2.281	-
Pot Cap-1 Maneuver	416	942	-	-	1405	-
Stage 1	944	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	337	942	-	-	1405	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	5.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	337	942	1405	-
HCM Lane V/C Ratio	-	-	0.146	0.164	0.189	-
HCM Control Delay (s)	-	-	17.5	9.6	8.2	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.6	0.7	-

Intersection	
Int Delay, s/veh	2.3

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	14	128	200	25	45	10
Future Vol, veh/h	14	128	200	25	45	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	1	-	0	-
Peak Hour Factor	42	89	89	58	72	69
Heavy Vehicles, %	0	14	8	4	10	18
Mvmt Flow	33	144	225	43	63	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	268	0	-	0	457	247
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	210	-
Critical Hdwy	4.1	-	-	-	6.5	6.38
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	2.2	-	-	-	3.59	3.462
Pot Cap-1 Maneuver	1307	-	-	-	547	754
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	806	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1307	-	-	-	532	754
Mov Cap-2 Maneuver	-	-	-	-	532	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	806	-

Approach	NB	SB	NE
HCM Control Delay, s	1.5	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	563	1307	-	-	-
HCM Lane V/C Ratio	0.137	0.026	-	-	-
HCM Control Delay (s)	12.4	7.8	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.5	0.1	-	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	57	77	27	98	60
Future Vol, veh/h	23	57	77	27	98	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-2	-	-	2
Peak Hour Factor	75	84	54	80	76	73
Heavy Vehicles, %	0	11	19	9	4	5
Mvmt Flow	31	68	143	34	129	82

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	483	143	0	0	177	0
Stage 1	143	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Critical Hdwy	6	6.11	-	-	4.14	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.236	-
Pot Cap-1 Maneuver	576	888	-	-	1387	-
Stage 1	903	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	520	888	-	-	1387	-
Mov Cap-2 Maneuver	520	-	-	-	-	-
Stage 1	903	-	-	-	-	-
Stage 2	680	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	4.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	520	888	1387	-
HCM Lane V/C Ratio	-	-	0.059	0.076	0.093	-
HCM Control Delay (s)	-	-	12.4	9.4	7.9	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	0.3	-

Intersection	
Int Delay, s/veh	5.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	167	148	32	136	139
Future Vol, veh/h	54	167	148	32	136	139
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	0	-	0	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	1
Peak Hour Factor	76	84	91	75	91	84
Heavy Vehicles, %	0	6	1	0	3	3
Mvmt Flow	71	199	163	43	149	165

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	626	163	0	0	206	0
Stage 1	163	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Critical Hdwy	5.8	5.96	-	-	4.13	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.354	-	-	2.227	-
Pot Cap-1 Maneuver	501	883	-	-	1359	-
Stage 1	895	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	446	883	-	-	1359	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	613	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	3.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	446	883	1359	-
HCM Lane V/C Ratio	-	-	0.159	0.225	0.11	-
HCM Control Delay (s)	-	-	14.6	10.3	8	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.9	0.4	-

Intersection	
Int Delay, s/veh	2.2

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	14	192	176	61	58	12
Future Vol, veh/h	14	192	176	61	58	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	1	-	0	-
Peak Hour Factor	75	91	80	77	75	81
Heavy Vehicles, %	20	4	6	3	5	8
Mvmt Flow	19	211	220	79	77	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	299	0	-	0	509	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	249	-
Critical Hdwy	4.3	-	-	-	6.45	6.28
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.38	-	-	-	3.545	3.372
Pot Cap-1 Maneuver	1166	-	-	-	519	764
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	785	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1166	-	-	-	510	764
Mov Cap-2 Maneuver	-	-	-	-	510	-
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	785	-

Approach	NB	SB	NE
HCM Control Delay, s	0.7	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	539	1166	-	-	-
HCM Lane V/C Ratio	0.171	0.016	-	-	-
HCM Control Delay (s)	13.1	8.1	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.6	0	-	-	-

Intersection	
Int Delay, s/veh	5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	105	107	15	71	116
Future Vol, veh/h	33	105	107	15	71	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-2	-	-	2
Peak Hour Factor	59	68	86	71	86	88
Heavy Vehicles, %	15	4	7	18	4	4
Mvmt Flow	56	154	124	21	83	132

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	422	124	0	0	145	0
Stage 1	124	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.15	6.04	-	-	4.14	-
Critical Hdwy Stg 1	5.15	-	-	-	-	-
Critical Hdwy Stg 2	5.15	-	-	-	-	-
Follow-up Hdwy	3.635	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	591	928	-	-	1425	-
Stage 1	882	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	554	928	-	-	1425	-
Mov Cap-2 Maneuver	554	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	702	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	554	928	1425	-
HCM Lane V/C Ratio	-	-	0.101	0.166	0.058	-
HCM Control Delay (s)	-	-	12.2	9.7	7.7	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.6	0.2	-

Intersection	
Int Delay, s/veh	6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	68	209	203	37	156	161
Future Vol, veh/h	68	209	203	37	156	161
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	0	-	0	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	1
Peak Hour Factor	76	84	91	75	91	84
Heavy Vehicles, %	0	6	1	0	3	3
Mvmt Flow	89	249	223	49	171	192

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	757	223	0	0	272	0
Stage 1	223	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Critical Hdwy	5.8	5.96	-	-	4.13	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.354	-	-	2.227	-
Pot Cap-1 Maneuver	429	822	-	-	1286	-
Stage 1	850	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	372	822	-	-	1286	-
Mov Cap-2 Maneuver	372	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	561	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	372	822	1286	-
HCM Lane V/C Ratio	-	-	0.241	0.303	0.133	-
HCM Control Delay (s)	-	-	17.7	11.3	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.9	1.3	0.5	-

Intersection	
Int Delay, s/veh	2.8

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	19	263	204	71	80	14
Future Vol, veh/h	19	263	204	71	80	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	1	-	0	-
Peak Hour Factor	75	91	80	77	75	81
Heavy Vehicles, %	20	4	6	3	5	8
Mvmt Flow	25	289	255	92	107	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	347	0	-	0	640	301
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	339	-
Critical Hdwy	4.3	-	-	-	6.45	6.28
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.38	-	-	-	3.545	3.372
Pot Cap-1 Maneuver	1118	-	-	-	435	725
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	715	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1118	-	-	-	423	725
Mov Cap-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	715	-

Approach	NB	SB	NE
HCM Control Delay, s	0.7	0	16
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	449	1118	-	-	-
HCM Lane V/C Ratio	0.276	0.023	-	-	-
HCM Control Delay (s)	16	8.3	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	1.1	0.1	-	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	144	147	21	82	135
Future Vol, veh/h	38	144	147	21	82	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-2	-	-	2
Peak Hour Factor	59	68	86	71	86	88
Heavy Vehicles, %	15	4	7	18	4	4
Mvmt Flow	64	212	171	30	95	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	514	171	0	0	201	0
Stage 1	171	-	-	-	-	-
Stage 2	343	-	-	-	-	-
Critical Hdwy	6.15	6.04	-	-	4.14	-
Critical Hdwy Stg 1	5.15	-	-	-	-	-
Critical Hdwy Stg 2	5.15	-	-	-	-	-
Follow-up Hdwy	3.635	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	528	876	-	-	1359	-
Stage 1	844	-	-	-	-	-
Stage 2	717	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	488	876	-	-	1359	-
Mov Cap-2 Maneuver	488	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	663	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	488	876	1359	-
HCM Lane V/C Ratio	-	-	0.132	0.242	0.07	-
HCM Control Delay (s)	-	-	13.5	10.4	7.8	0
HCM Lane LOS	-	-	B	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.9	0.2	-

Intersection	
Int Delay, s/veh	8.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	328	93	20	362	168
Future Vol, veh/h	20	328	93	20	362	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	0	-	0	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	1
Peak Hour Factor	77	74	84	79	74	92
Heavy Vehicles, %	2	12	3	2	9	4
Mvmt Flow	26	443	111	25	489	183

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1272	111	0	0	136	0
Stage 1	111	-	-	-	-	-
Stage 2	1161	-	-	-	-	-
Critical Hdwy	5.82	6.02	-	-	4.19	-
Critical Hdwy Stg 1	4.82	-	-	-	-	-
Critical Hdwy Stg 2	4.82	-	-	-	-	-
Follow-up Hdwy	3.518	3.408	-	-	2.281	-
Pot Cap-1 Maneuver	229	924	-	-	1406	-
Stage 1	931	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	149	924	-	-	1406	-
Mov Cap-2 Maneuver	149	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	236	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	6.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	149	924	1406	-
HCM Lane V/C Ratio	-	-	0.174	0.48	0.348	-
HCM Control Delay (s)	-	-	34.2	12.4	8.9	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	2.6	1.6	-

Intersection	
Int Delay, s/veh	1.9

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	14	355	404	25	45	10
Future Vol, veh/h	14	355	404	25	45	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	1	-	0	-
Peak Hour Factor	42	89	89	58	72	69
Heavy Vehicles, %	0	14	8	4	10	18
Mvmt Flow	33	399	454	43	63	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	497	0	-	0	941	476
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	465	-
Critical Hdwy	4.1	-	-	-	6.5	6.38
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	2.2	-	-	-	3.59	3.462
Pot Cap-1 Maneuver	1077	-	-	-	283	557
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1077	-	-	-	272	557
Mov Cap-2 Maneuver	-	-	-	-	272	-
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	616	-

Approach	NB	SB	NE
HCM Control Delay, s	0.7	0	21
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	301	1077	-	-	-
HCM Lane V/C Ratio	0.256	0.031	-	-	-
HCM Control Delay (s)	21	8.4	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	1	0.1	-	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	185	57	77	254	55	103
Future Vol, veh/h	185	57	77	254	55	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-2	-	-	2
Peak Hour Factor	75	84	54	80	76	73
Heavy Vehicles, %	0	11	19	9	4	5
Mvmt Flow	247	68	143	318	72	141

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	428	143	0	0	461	0
Stage 1	143	-	-	-	-	-
Stage 2	285	-	-	-	-	-
Critical Hdwy	6	6.11	-	-	4.14	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.236	-
Pot Cap-1 Maneuver	616	888	-	-	1090	-
Stage 1	903	-	-	-	-	-
Stage 2	793	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	572	888	-	-	1090	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	903	-	-	-	-	-
Stage 2	736	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	2.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	572	888	1090	-
HCM Lane V/C Ratio	-	-	0.431	0.076	0.066	-
HCM Control Delay (s)	-	-	16	9.4	8.5	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	2.2	0.2	0.2	-

Intersection	
Int Delay, s/veh	8.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	428	155	25	411	172
Future Vol, veh/h	21	428	155	25	411	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	0	-	0	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	1
Peak Hour Factor	76	84	91	75	91	84
Heavy Vehicles, %	0	6	1	0	3	3
Mvmt Flow	28	510	170	33	452	205

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1279	170	0	0	203	0
Stage 1	170	-	-	-	-	-
Stage 2	1109	-	-	-	-	-
Critical Hdwy	5.8	5.96	-	-	4.13	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.354	-	-	2.227	-
Pot Cap-1 Maneuver	229	876	-	-	1363	-
Stage 1	890	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	153	876	-	-	1363	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	256	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	6.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	153	876	1363	-
HCM Lane V/C Ratio	-	-	0.181	0.582	0.331	-
HCM Control Delay (s)	-	-	33.6	14.7	8.9	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	3.8	1.5	-

Intersection	
Int Delay, s/veh	2.4

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	14	460	452	61	58	12
Future Vol, veh/h	14	460	452	61	58	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	1	-	0	-
Peak Hour Factor	75	91	80	77	75	81
Heavy Vehicles, %	20	4	6	3	5	8
Mvmt Flow	19	505	565	79	77	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	644	0	-	0	1148	605
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	543	-
Critical Hdwy	4.3	-	-	-	6.45	6.28
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.38	-	-	-	3.545	3.372
Pot Cap-1 Maneuver	861	-	-	-	217	487
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	576	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	861	-	-	-	210	487
Mov Cap-2 Maneuver	-	-	-	-	210	-
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	576	-

Approach	NB	SB	NE
HCM Control Delay, s	0.3	0	30.6
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	231	861	-	-	-
HCM Lane V/C Ratio	0.399	0.022	-	-	-
HCM Control Delay (s)	30.6	9.3	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	1.8	0.1	-	-	-

Intersection	
Int Delay, s/veh	11.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	275	105	107	283	37	150
Future Vol, veh/h	275	105	107	283	37	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-2	-	-	2
Peak Hour Factor	59	68	86	71	86	88
Heavy Vehicles, %	15	4	7	18	4	4
Mvmt Flow	466	154	124	399	43	170

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	380	124	0	0	523	0
Stage 1	124	-	-	-	-	-
Stage 2	256	-	-	-	-	-
Critical Hdwy	6.15	6.04	-	-	4.14	-
Critical Hdwy Stg 1	5.15	-	-	-	-	-
Critical Hdwy Stg 2	5.15	-	-	-	-	-
Follow-up Hdwy	3.635	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	623	928	-	-	1033	-
Stage 1	882	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	594	928	-	-	1033	-
Mov Cap-2 Maneuver	594	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	743	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.6	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	594	928	1033	-
HCM Lane V/C Ratio	-	-	0.785	0.166	0.042	-
HCM Control Delay (s)	-	-	29.6	9.7	8.6	0
HCM Lane LOS	-	-	D	A	A	A
HCM 95th %tile Q(veh)	-	-	7.5	0.6	0.1	-

Intersection	
Int Delay, s/veh	17.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	598	215	25	479	201
Future Vol, veh/h	28	598	215	25	479	201
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	0	-	0	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	1
Peak Hour Factor	76	84	91	75	91	84
Heavy Vehicles, %	0	6	1	0	3	3
Mvmt Flow	37	712	236	33	526	239

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1527	236	0	0	269	0
Stage 1	236	-	-	-	-	-
Stage 2	1291	-	-	-	-	-
Critical Hdwy	5.8	5.96	-	-	4.13	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.354	-	-	2.227	-
Pot Cap-1 Maneuver	169	809	-	-	1289	-
Stage 1	840	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	100	809	-	-	1289	-
Mov Cap-2 Maneuver	100	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	191	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.8	0	6.7
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	100	809	1289	-
HCM Lane V/C Ratio	-	-	0.368	0.88	0.408	-
HCM Control Delay (s)	-	-	60.6	32.4	9.7	-
HCM Lane LOS	-	-	F	D	A	-
HCM 95th %tile Q(veh)	-	-	1.5	11.4	2	-

Intersection	
Int Delay, s/veh	8.2

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	19	664	529	71	80	14
Future Vol, veh/h	19	664	529	71	80	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	1	-	0	-
Peak Hour Factor	75	91	80	77	75	81
Heavy Vehicles, %	20	4	6	3	5	8
Mvmt Flow	25	730	661	92	107	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	753	0	-	0	1487	707
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	780	-
Critical Hdwy	4.3	-	-	-	6.45	6.28
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.38	-	-	-	3.545	3.372
Pot Cap-1 Maneuver	781	-	-	-	135	425
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	447	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	781	-	-	-	128	425
Mov Cap-2 Maneuver	-	-	-	-	128	-
Stage 1	-	-	-	-	457	-
Stage 2	-	-	-	-	447	-

Approach	NB	SB	NE
HCM Control Delay, s	0.3	0	105.6
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	142	781	-	-	-
HCM Lane V/C Ratio	0.873	0.032	-	-	-
HCM Control Delay (s)	105.6	9.8	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	5.8	0.1	-	-	-

Intersection	
Int Delay, s/veh	24.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	320	144	147	422	39	178
Future Vol, veh/h	320	144	147	422	39	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-2	-	-	2
Peak Hour Factor	59	68	86	71	86	88
Heavy Vehicles, %	15	4	7	18	4	4
Mvmt Flow	542	212	171	594	45	202

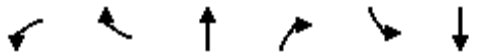
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	463	171	0	0	765	0
Stage 1	171	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Critical Hdwy	6.15	6.04	-	-	4.14	-
Critical Hdwy Stg 1	5.15	-	-	-	-	-
Critical Hdwy Stg 2	5.15	-	-	-	-	-
Follow-up Hdwy	3.635	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	562	876	-	-	839	-
Stage 1	844	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 528	876	-	-	839	-
Mov Cap-2 Maneuver	~ 528	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	56.4	0	1.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	528	876	839	-
HCM Lane V/C Ratio	-	-	1.027	0.242	0.054	-
HCM Control Delay (s)	-	-	74.4	10.4	9.5	0
HCM Lane LOS	-	-	F	B	A	A
HCM 95th %tile Q(veh)	-	-	15.2	0.9	0.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	328	93	20	362	168
Future Volume (vph)	20	328	93	20	362	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Grade (%)	-3%		-2%			1%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1856	1512	1863	1599	1648	1818
Flt Permitted	0.950				0.685	
Satd. Flow (perm)	1856	1512	1863	1599	1188	1818
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		443		25		
Link Speed (mph)	30		40			40
Link Distance (ft)	429		605			543
Travel Time (s)	9.8		10.3			9.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.77	0.74	0.84	0.79	0.74	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	12%	3%	2%	9%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	26	443	111	25	489	183
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	443	111	25	489	183
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		4			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.94	0.94	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Turn Type	Prot	Prot	NA	Perm	D.P+P	NA
Protected Phases	3	3	1		6	1 6
Permitted Phases				1	1	
Detector Phase	3	3	1	1	6	1 6
Switch Phase						



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	21.0	21.0	24.0	24.0	15.0	
Total Split (%)	35.0%	35.0%	40.0%	40.0%	25.0%	
Maximum Green (s)	15.0	15.0	18.0	18.0	9.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)	8.2	8.2	18.1	18.1	27.1	33.2
Actuated g/C Ratio	0.15	0.15	0.34	0.34	0.51	0.62
v/c Ratio	0.09	0.73	0.18	0.04	0.72	0.16
Control Delay	19.1	10.4	14.6	7.0	16.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	10.4	14.6	7.0	16.5	5.5
LOS	B	B	B	A	B	A
Approach Delay	10.9		13.2			13.5
Approach LOS	B		B			B
Queue Length 50th (ft)	7	0	22	0	59	17
Queue Length 95th (ft)	20	24	58	12	128	57
Internal Link Dist (ft)	349		525			463
Turn Bay Length (ft)					270	
Base Capacity (vph)	524	744	631	558	681	1129
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.60	0.18	0.04	0.72	0.16

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 53.4			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 12.5		Intersection LOS: B	
Intersection Capacity Utilization 40.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: VT-7A & US-7

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	14	355	404	25	45	10
Future Volume (vph)	14	355	404	25	45	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-4%	1%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.988		0.975	
Flt Protected		0.996			0.961	
Satd. Flow (prot)	0	1709	1735	0	1597	0
Flt Permitted		0.947			0.961	
Satd. Flow (perm)	0	1625	1735	0	1597	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			11		14	
Link Speed (mph)		40	25		35	
Link Distance (ft)		325	259		475	
Travel Time (s)		5.5	7.1		9.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.42	0.89	0.89	0.58	0.72	0.69
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	14%	8%	4%	10%	18%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	33	399	454	43	63	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	432	497	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.01	1.01	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (ft)	20	100	100		20	
Trailing Detector (ft)	0	0	0		0	
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	24.0	24.0	24.0		24.0	
Total Split (s)	36.0	36.0	36.0		24.0	
Total Split (%)	60.0%	60.0%	60.0%		40.0%	
Maximum Green (s)	30.0	30.0	30.0		18.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.0	6.0		6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	Max	Max	Max		None	
Walk Time (s)			7.0			
Flash Dont Walk (s)			11.0			
Pedestrian Calls (#/hr)			0			
Act Effct Green (s)		38.4	38.4		7.5	
Actuated g/C Ratio		0.76	0.76		0.15	
v/c Ratio		0.35	0.38		0.31	
Control Delay		5.7	5.7		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		5.7	5.7		19.4	
LOS		A	A		B	
Approach Delay		5.7	5.7		19.4	
Approach LOS		A	A		B	
Queue Length 50th (ft)		54	63		16	
Queue Length 95th (ft)		117	133		35	
Internal Link Dist (ft)		245	179		395	
Turn Bay Length (ft)						
Base Capacity (vph)		1228	1314		575	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.35	0.38		0.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 50.8	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.38	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 44.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: VT-67 & VT-7A

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	185	57	77	254	55	103
Future Volume (vph)	185	57	77	254	55	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-2%		-2%			2%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950					0.983
Satd. Flow (prot)	1762	1421	1559	1447	0	1708
Flt Permitted	0.950					0.864
Satd. Flow (perm)	1762	1421	1559	1447	0	1501
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		68		318		
Link Speed (mph)	30		30			30
Link Distance (ft)	298		358			352
Travel Time (s)	6.8		8.1			8.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.75	0.84	0.54	0.80	0.76	0.73
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	19%	9%	4%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	247	68	143	318	72	141
Shared Lane Traffic (%)						
Lane Group Flow (vph)	247	68	143	318	0	213
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.03	1.03	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Turn Type	Prot	Prot	NA	Perm	Perm	NA
Protected Phases	3	3	1			1
Permitted Phases				1	1	
Detector Phase	3	3	1	1	1	1
Switch Phase						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	28.0	28.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.0	22.0	26.0	26.0	26.0	26.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)	12.1	12.1	26.1	26.1		26.1
Actuated g/C Ratio	0.24	0.24	0.52	0.52		0.52
v/c Ratio	0.58	0.17	0.18	0.35		0.27
Control Delay	22.5	5.7	8.2	2.5		8.9
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	22.5	5.7	8.2	2.5		8.9
LOS	C	A	A	A		A
Approach Delay	18.9		4.3			8.9
Approach LOS	B		A			A
Queue Length 50th (ft)	64	0	20	0		31
Queue Length 95th (ft)	94	19	30	22		60
Internal Link Dist (ft)	218		278			272
Turn Bay Length (ft)						
Base Capacity (vph)	774	662	809	904		779
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.32	0.10	0.18	0.35		0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 50.3			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 35.4%		ICU Level of Service A	
Analysis Period (min) 15			

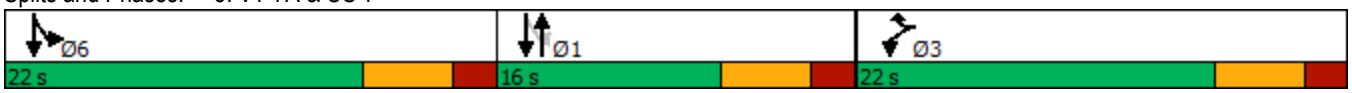
Splits and Phases: 11: VT-7A & VT-313

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	428	155	25	411	172
Future Volume (vph)	21	428	155	25	411	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Grade (%)	-3%		-2%			1%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1893	1598	1900	1631	1744	1835
Flt Permitted	0.950				0.650	
Satd. Flow (perm)	1893	1598	1900	1631	1193	1835
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		510		33		
Link Speed (mph)	30		40			40
Link Distance (ft)	429		605			543
Travel Time (s)	9.8		10.3			9.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.76	0.84	0.91	0.75	0.91	0.84
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	1%	0%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	28	510	170	33	452	205
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	510	170	33	452	205
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		4			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.94	0.94	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Turn Type	Prot	Prot	NA	Perm	D.P+P	NA
Protected Phases	3	3	1		6	1 6
Permitted Phases				1	1	
Detector Phase	3	3	1	1	6	1 6
Switch Phase						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	22.0	22.0	16.0	16.0	22.0	
Total Split (%)	36.7%	36.7%	26.7%	26.7%	36.7%	
Maximum Green (s)	16.0	16.0	10.0	10.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)	8.2	8.2	10.2	10.2	22.6	28.8
Actuated g/C Ratio	0.17	0.17	0.21	0.21	0.46	0.59
v/c Ratio	0.09	0.74	0.43	0.09	0.66	0.19
Control Delay	18.1	9.5	23.4	9.5	12.4	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	9.5	23.4	9.5	12.4	6.1
LOS	B	A	C	A	B	A
Approach Delay	9.9		21.1			10.4
Approach LOS	A		C			B
Queue Length 50th (ft)	7	0	40	0	51	19
Queue Length 95th (ft)	20	47	110	15	159	60
Internal Link Dist (ft)	349		525			463
Turn Bay Length (ft)					270	
Base Capacity (vph)	626	870	392	363	814	1049
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.59	0.43	0.09	0.56	0.20

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 49.2	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 50.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: VT-7A & US-7

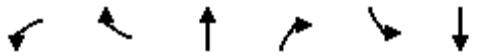


Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	14	460	452	61	58	12
Future Volume (vph)	14	460	452	61	58	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-4%	1%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.983		0.978	
Flt Protected		0.998			0.960	
Satd. Flow (prot)	0	1849	1759	0	1691	0
Flt Permitted		0.972			0.960	
Satd. Flow (perm)	0	1801	1759	0	1691	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			17		15	
Link Speed (mph)		40	25		35	
Link Distance (ft)		325	259		475	
Travel Time (s)		5.5	7.1		9.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.75	0.91	0.80	0.77	0.75	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	20%	4%	6%	3%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	19	505	565	79	77	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	524	644	0	92	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.01	1.01	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (ft)	20	100	100		20	
Trailing Detector (ft)	0	0	0		0	
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						

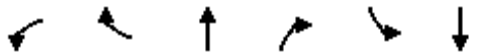
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	24.0	24.0	24.0		24.0	
Total Split (s)	36.0	36.0	36.0		24.0	
Total Split (%)	60.0%	60.0%	60.0%		40.0%	
Maximum Green (s)	30.0	30.0	30.0		18.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.0	6.0		6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	Min	Min	Min		None	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)		34.4	34.4		8.1	
Actuated g/C Ratio		0.77	0.77		0.18	
v/c Ratio		0.38	0.48		0.29	
Control Delay		5.8	6.8		19.1	
Queue Delay		0.0	0.0		0.0	
Total Delay		5.8	6.8		19.1	
LOS		A	A		B	
Approach Delay		5.8	6.8		19.1	
Approach LOS		A	A		B	
Queue Length 50th (ft)		73	96		23	
Queue Length 95th (ft)		148	160		43	
Internal Link Dist (ft)		245	179		395	
Turn Bay Length (ft)						
Base Capacity (vph)		1359	1332		744	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.39	0.48		0.12	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 49.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 7: VT-67 & VT-7A



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	275	105	107	283	37	150
Future Volume (vph)	275	105	107	283	37	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-2%		-2%			2%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950					0.990
Satd. Flow (prot)	1532	1516	1734	1336	0	1731
Flt Permitted	0.950					0.918
Satd. Flow (perm)	1532	1516	1734	1336	0	1605
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		154		399		
Link Speed (mph)	30		30			30
Link Distance (ft)	298		358			352
Travel Time (s)	6.8		8.1			8.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.59	0.68	0.86	0.71	0.86	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	15%	4%	7%	18%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	466	154	124	399	43	170
Shared Lane Traffic (%)						
Lane Group Flow (vph)	466	154	124	399	0	213
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.03	1.03	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	3		1			1
Permitted Phases		3		1	1	
Detector Phase	3	3	1	1	1	1
Switch Phase						

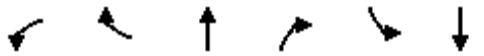


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	24.0	24.0	24.0	24.0
Total Split (%)	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%
Maximum Green (s)	30.0	30.0	18.0	18.0	18.0	18.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)	20.0	20.0	18.3	18.3		18.3
Actuated g/C Ratio	0.40	0.40	0.36	0.36		0.36
v/c Ratio	0.77	0.22	0.20	0.54		0.37
Control Delay	22.1	2.7	14.5	5.3		16.3
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	22.1	2.7	14.5	5.3		16.3
LOS	C	A	B	A		B
Approach Delay	17.3		7.5			16.3
Approach LOS	B		A			B
Queue Length 50th (ft)	112	0	24	0		44
Queue Length 95th (ft)	102	10	66	17		113
Internal Link Dist (ft)	218		278			272
Turn Bay Length (ft)						
Base Capacity (vph)	924	976	628	738		581
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.50	0.16	0.20	0.54		0.37

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 50.5			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 13.4		Intersection LOS: B	
Intersection Capacity Utilization 41.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: VT-7A & VT-313

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	28	598	215	25	479	201
Future Volume (vph)	28	598	215	25	479	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	12	12	12	12
Grade (%)	-3%		-2%			1%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1893	1598	1900	1631	1744	1835
Flt Permitted	0.950				0.612	
Satd. Flow (perm)	1893	1598	1900	1631	1123	1835
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		659		33		
Link Speed (mph)	30		40			40
Link Distance (ft)	429		605			543
Travel Time (s)	9.8		10.3			9.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.76	0.84	0.91	0.75	0.91	0.84
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	1%	0%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	37	712	236	33	526	239
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	712	236	33	526	239
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		4			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.94	0.94	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Turn Type	Prot	Prot	NA	Perm	D.P+P	NA
Protected Phases	3	3	1		6	1 6
Permitted Phases				1	1	
Detector Phase	3	3	1	1	6	1 6
Switch Phase						



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	19.0	19.0	24.0	24.0	17.0	
Total Split (%)	31.7%	31.7%	40.0%	40.0%	28.3%	
Maximum Green (s)	13.0	13.0	18.0	18.0	11.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)	10.2	10.2	18.1	18.1	29.0	35.0
Actuated g/C Ratio	0.18	0.18	0.32	0.32	0.51	0.61
v/c Ratio	0.11	0.86	0.39	0.06	0.77	0.21
Control Delay	20.0	16.1	18.5	6.7	18.2	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	16.1	18.5	6.7	18.2	6.1
LOS	B	B	B	A	B	A
Approach Delay	16.3		17.0			14.4
Approach LOS	B		B			B
Queue Length 50th (ft)	11	16	65	0	91	33
Queue Length 95th (ft)	26	#102	123	12	#213	60
Internal Link Dist (ft)	349		525			463
Turn Bay Length (ft)					270	
Base Capacity (vph)	431	873	599	537	690	1084
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.82	0.39	0.06	0.76	0.22

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 57.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 15.6	Intersection LOS: B
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

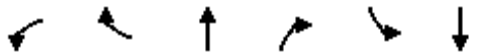
Splits and Phases: 3: VT-7A & US-7

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	19	664	529	71	80	14
Future Volume (vph)	19	664	529	71	80	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-4%	1%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.981	
Flt Protected		0.998			0.959	
Satd. Flow (prot)	0	1850	1761	0	1696	0
Flt Permitted		0.967			0.959	
Satd. Flow (perm)	0	1793	1761	0	1696	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			24		11	
Link Speed (mph)		40	25		35	
Link Distance (ft)		325	259		475	
Travel Time (s)		5.5	7.1		9.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.75	0.91	0.80	0.77	0.75	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	20%	4%	6%	3%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	25	730	661	92	107	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	755	753	0	124	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.01	1.01	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (ft)	20	100	100		20	
Trailing Detector (ft)	0	0	0		0	
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	24.0	24.0	24.0		15.0	
Total Split (s)	45.0	45.0	45.0		15.0	
Total Split (%)	75.0%	75.0%	75.0%		25.0%	
Maximum Green (s)	39.0	39.0	39.0		9.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.0	6.0		6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	Min	Min	Min		None	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)		36.1	36.1		8.1	
Actuated g/C Ratio		0.71	0.71		0.16	
v/c Ratio		0.60	0.60		0.45	
Control Delay		8.6	8.5		26.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.6	8.5		26.2	
LOS		A	A		C	
Approach Delay		8.6	8.5		26.2	
Approach LOS		A	A		C	
Queue Length 50th (ft)		135	131		34	
Queue Length 95th (ft)		233	178		67	
Internal Link Dist (ft)		245	179		395	
Turn Bay Length (ft)						
Base Capacity (vph)		1355	1337		325	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.56	0.56		0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 51.1			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 65.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 7: VT-67 & VT-7A

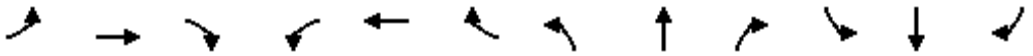


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	320	144	147	422	39	178
Future Volume (vph)	320	144	147	422	39	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-2%		-2%			2%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950					0.991
Satd. Flow (prot)	1532	1516	1734	1336	0	1733
Flt Permitted	0.950					0.914
Satd. Flow (perm)	1532	1516	1734	1336	0	1598
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		212		594		
Link Speed (mph)	30		30			30
Link Distance (ft)	298		358			352
Travel Time (s)	6.8		8.1			8.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.59	0.68	0.86	0.71	0.86	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	15%	4%	7%	18%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	542	212	171	594	45	202
Shared Lane Traffic (%)						
Lane Group Flow (vph)	542	212	171	594	0	247
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.03	1.03	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	3		1			1
Permitted Phases		3		1	1	
Detector Phase	3	3	1	1	1	1
Switch Phase						

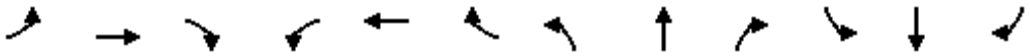
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	24.0	24.0	24.0	24.0
Total Split (%)	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%
Maximum Green (s)	30.0	30.0	18.0	18.0	18.0	18.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)	22.9	22.9	18.3	18.3		18.3
Actuated g/C Ratio	0.43	0.43	0.34	0.34		0.34
v/c Ratio	0.82	0.27	0.29	0.70		0.45
Control Delay	24.8	2.5	16.6	7.4		18.9
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	24.8	2.5	16.6	7.4		18.9
LOS	C	A	B	A		B
Approach Delay	18.5		9.4			18.9
Approach LOS	B		A			B
Queue Length 50th (ft)	140	0	40	0		62
Queue Length 95th (ft)	122	10	87	13		130
Internal Link Dist (ft)	218		278			272
Turn Bay Length (ft)						
Base Capacity (vph)	874	956	593	847		547
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.62	0.22	0.29	0.70		0.45

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 53.3			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 52.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: VT-7A & VT-313



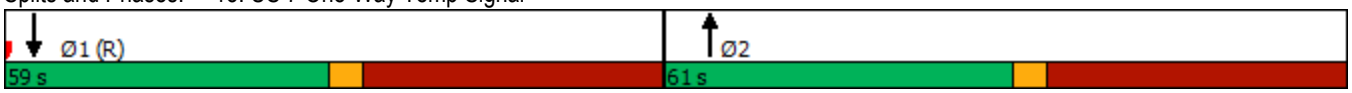
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	282	0	0	239	0
Future Volume (vph)	0	0	0	0	0	0	0	282	0	0	239	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			2%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	0	0	0	0	0	0	1844	0	0	1881	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	0	0	0	1844	0	0	1881	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		629			935			893			1109	
Travel Time (s)		14.3			21.3			24.4			30.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	307	0	0	260	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	307	0	0	260	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors								2			2	
Detector Template								Thru			Thru	
Leading Detector (ft)								100			100	
Trailing Detector (ft)								0			0	
Turn Type								NA			NA	
Protected Phases								2			1	
Permitted Phases												
Detector Phase								2			1	
Switch Phase												

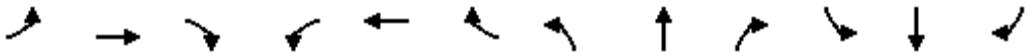


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)								5.0			5.0	
Minimum Split (s)								35.0			35.5	
Total Split (s)								61.0			59.0	
Total Split (%)								50.8%			49.2%	
Maximum Green (s)								31.0			29.0	
Yellow Time (s)								3.0			3.0	
All-Red Time (s)								27.0			27.0	
Lost Time Adjust (s)								0.0			0.0	
Total Lost Time (s)								30.0			30.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)								3.0			3.0	
Minimum Gap (s)								3.0			3.0	
Time Before Reduce (s)								0.0			0.0	
Time To Reduce (s)								0.0			0.0	
Recall Mode								Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)								31.0			29.0	
Actuated g/C Ratio								0.26			0.24	
v/c Ratio								0.64			0.57	
Control Delay								46.9			45.8	
Queue Delay								0.0			0.0	
Total Delay								46.9			45.8	
LOS								D			D	
Approach Delay								46.9			45.8	
Approach LOS								D			D	
Queue Length 50th (ft)								212			178	
Queue Length 95th (ft)								313			268	
Internal Link Dist (ft)		549			855			813			1029	
Turn Bay Length (ft)												
Base Capacity (vph)								476			454	
Starvation Cap Reductn								0			0	
Spillback Cap Reductn								0			0	
Storage Cap Reductn								0			0	
Reduced v/c Ratio								0.64			0.57	

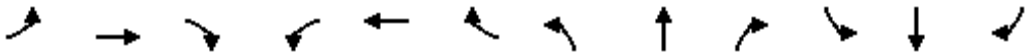
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 46.4		Intersection LOS: D	
Intersection Capacity Utilization 39.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15: US 7 One-Way Temp Signal





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	313	0	0	353	0
Future Volume (vph)	0	0	0	0	0	0	0	313	0	0	353	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			2%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	0	0	0	0	0	0	1844	0	0	1881	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	0	0	0	1844	0	0	1881	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		629			935			893			1109	
Travel Time (s)		14.3			21.3			24.4			30.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	340	0	0	384	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	340	0	0	384	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors								2			2	
Detector Template								Thru			Thru	
Leading Detector (ft)								100			100	
Trailing Detector (ft)								0			0	
Turn Type								NA			NA	
Protected Phases								2			1	
Permitted Phases												
Detector Phase								2			1	
Switch Phase												

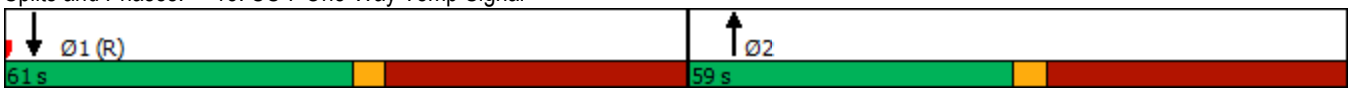


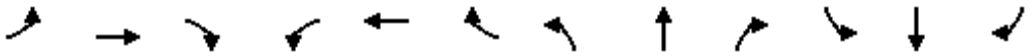
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)								5.0			1.0	
Minimum Split (s)								35.0			35.5	
Total Split (s)								59.0			61.0	
Total Split (%)								49.2%			50.8%	
Maximum Green (s)								29.0			31.0	
Yellow Time (s)								3.0			3.0	
All-Red Time (s)								27.0			27.0	
Lost Time Adjust (s)								0.0			0.0	
Total Lost Time (s)								30.0			30.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)								3.0			3.0	
Minimum Gap (s)								3.0			3.0	
Time Before Reduce (s)								0.0			0.0	
Time To Reduce (s)								0.0			0.0	
Recall Mode								Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)								29.0			31.0	
Actuated g/C Ratio								0.24			0.26	
v/c Ratio								0.76			0.79	
Control Delay								54.9			54.7	
Queue Delay								0.0			0.0	
Total Delay								54.9			54.7	
LOS								D			D	
Approach Delay								54.9			54.7	
Approach LOS								D			D	
Queue Length 50th (ft)								246			278	
Queue Length 95th (ft)								#374			#422	
Internal Link Dist (ft)		549			855			813			1029	
Turn Bay Length (ft)												
Base Capacity (vph)								445			485	
Starvation Cap Reductn								0			0	
Spillback Cap Reductn								0			0	
Storage Cap Reductn								0			0	
Reduced v/c Ratio								0.76			0.79	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 59 (49%), Referenced to phase 1:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 54.8		Intersection LOS: D	
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

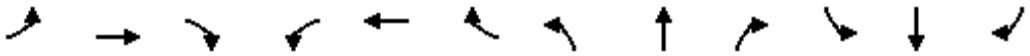
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 15: US 7 One-Way Temp Signal





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	449	0	0	411	0
Future Volume (vph)	0	0	0	0	0	0	0	449	0	0	411	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			2%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	0	0	0	0	0	0	1844	0	0	1881	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	0	0	0	1844	0	0	1881	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		629			935			893			1109	
Travel Time (s)		14.3			21.3			24.4			30.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	488	0	0	447	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	488	0	0	447	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors								2			2	
Detector Template								Thru			Thru	
Leading Detector (ft)								100			100	
Trailing Detector (ft)								0			0	
Turn Type								NA			NA	
Protected Phases								2			1	
Permitted Phases												
Detector Phase								2			1	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)								5.0			1.0	
Minimum Split (s)								35.0			35.5	
Total Split (s)								61.0			59.0	
Total Split (%)								50.8%			49.2%	
Maximum Green (s)								31.0			29.0	
Yellow Time (s)								3.0			3.0	
All-Red Time (s)								27.0			27.0	
Lost Time Adjust (s)								0.0			0.0	
Total Lost Time (s)								30.0			30.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)								3.0			3.0	
Minimum Gap (s)								3.0			3.0	
Time Before Reduce (s)								0.0			0.0	
Time To Reduce (s)								0.0			0.0	
Recall Mode								None			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)								31.0			29.0	
Actuated g/C Ratio								0.26			0.24	
v/c Ratio								1.03			0.98	
Control Delay								91.9			84.3	
Queue Delay								0.0			0.0	
Total Delay								91.9			84.3	
LOS								F			F	
Approach Delay								91.9			84.3	
Approach LOS								F			F	
Queue Length 50th (ft)								~403			346	
Queue Length 95th (ft)								#612			#557	
Internal Link Dist (ft)		549			855			813			1029	
Turn Bay Length (ft)												
Base Capacity (vph)								476			454	
Starvation Cap Reductn								0			0	
Spillback Cap Reductn								0			0	
Storage Cap Reductn								0			0	
Reduced v/c Ratio								1.03			0.98	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 88.3		Intersection LOS: F	
Intersection Capacity Utilization 48.6%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 15: US 7 One-Way Temp Signal