

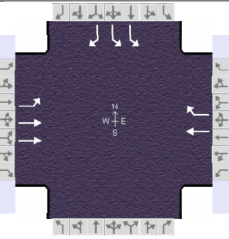
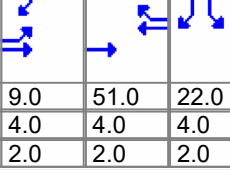
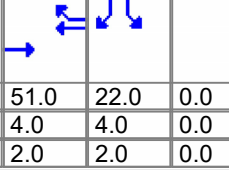
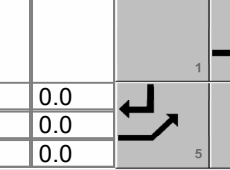
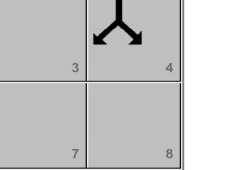
# Tuscarawas I-77 / US 250 / SR 39 Feasibility Study

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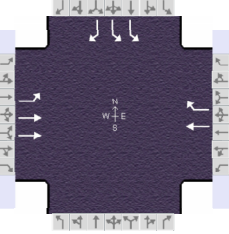
## Appendix F: Traffic Analysis



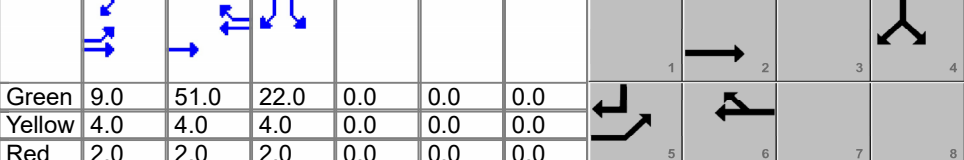
## HCS Signalized Intersection Input Data

General Information					Intersection Information											
Agency	Burgess & Niple				Duration, h	0.250										
Analyst	KB	Analysis Date	Jan 16, 2024		Area Type	Other										
Jurisdiction		Time Period	AM Peak		PHF	0.93										
Urban Street	SR 39	Analysis Year	2050		Analysis Period	1 > 7:00										
Intersection	SR 39 and Stonecreek	File Name	SR 39 AM.xus													
Project Description	AM No Build															
Demand Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand ( $v$ ), veh/h					80	320			410	200				200		90
Signal Information																
Cycle, s	100.0	Reference Phase	2		Green	9.0	51.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Offset, s	0	Reference Point	End		Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Uncoordinated	Yes	Simult. Gap E/W	On		Red	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On													
Traffic Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand ( $v$ ), veh/h					80	320			410	200				200		90
Initial Queue ( $Q_b$ ), veh/h					0	0			0	0				0		0
Base Saturation Flow Rate ( $s_o$ ), veh/h					1900	1900			1900	1900				1900		1900
Parking ( $N_m$ ), man/h						None			None						None	
Heavy Vehicles ( $P_{HV}$ ), %					14	14			5	0				3		3
Ped / Bike / RTOR, /h					0	0		0	0	0	0	0		0	0	
Buses ( $N_b$ ), buses/h					0	0	0	0	0	0				0	0	0
Arrival Type ( $AT$ )					3	3			3	3				3		3
Upstream Filtering ( $I$ )					1.00	1.00			0.98	0.98				1.00		1.00
Lane Width ( $W$ ), ft					12.0	12.0			12.0	12.0				12.0		12.0
Turn Bay Length, ft					200	300			130	0				2000		260
Grade ( $P_g$ ), %						0			0			0			0	
Speed Limit, mi/h					35	35			35	35				35		35
Phase Information					EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Maximum Green ( $G_{max}$ ) or Phase Split, s					9.0	35.0		51.0				22.0				
Yellow Change Interval ( $Y$ ), s					4.0	4.0		4.0				4.0				
Red Clearance Interval ( $R_c$ ), s					2.0	2.0		2.0				2.0				
Minimum Green ( $G_{min}$ ), s					6	20		20				10				
Start-Up Lost Time ( $l_t$ ), s					2.0	2.0		2.0			2.0					
Extension of Effective Green ( $e$ ), s					2.0	2.0		2.0			2.0					
Passage ( $PT$ ), s					2.0	2.0		2.0				2.0				
Recall Mode					Max	Max		Max				Max				
Dual Entry					No	Yes		Yes				Yes				
Walk ( $Walk$ ), s								0.0		0.0		0.0				
Pedestrian Clearance Time ( $PC$ ), s								0.0		0.0		0.0				
Multimodal Information					EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius								0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft								9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft					0.0		No	0.0	0	No		0		0.0	0	No
Width Outside / Bike Lane / Shoulder, ft					12.0	5.0	2.0	12.0	5.0	2.0				12.0	5.0	2.0
Pedestrian Signal / Occupied Parking						0.50		No	0.50		No			No	0.50	

# HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Burgess & Niple			Duration, h	0.250	
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other	
Jurisdiction		Time Period	AM Peak	PHF	0.93	
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00	
Intersection	SR 39 and Stonecreek	File Name	SR 39 AM.xus			
Project Description	AM No Build					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	80	320			410	200				200		90

Signal Information														
Cycle, s	100.0	Reference Phase	2	Green	9.0	51.0	22.0	0.0	0.0	0.0	1	2	3	4
Offset, s	0	Reference Point	End	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8
Uncoordinated	Yes	Simult. Gap E/W	On	Red	2.0	2.0	2.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On											

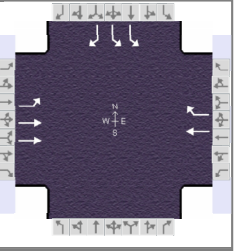
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6				4
Case Number	2.0	4.0		7.3				9.0
Phase Duration, s	15.0	72.0		57.0				28.0
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0		6.0				6.0
Max Allow Headway ( MAH ), s	3.1	3.1		3.1				3.2
Queue Clearance Time ( g <sub>s</sub> ), s	7.1	6.1		16.7				7.2
Green Extension Time ( g <sub>e</sub> ), s	0.0	2.1		2.1				0.6
Phase Call Probability	1.00	1.00		1.00				1.00
Max Out Probability	1.00	0.00		0.00				0.00

Movement Group Results	EB			WB			NB			SB			
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement	5	2			6	16				7		14	
Adjusted Flow Rate ( v ), veh/h	86	344			422	206				215		97	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1612	1611			1826					1716		1572	
Queue Service Time ( g <sub>s</sub> ), s	5.1	4.1			14.7					5.2		4.5	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	5.1	4.1			14.7					5.2		4.5	
Green Ratio ( g/C )	0.09	0.66			0.51					0.22		0.31	
Capacity ( c ), veh/h	145	2127			931					755		487	
Volume-to-Capacity Ratio ( X )	0.593	0.162			0.454					0.285		0.199	
Back of Queue ( Q ), ft/ln ( 95 th percentile)	134	64			265					103		82	
Back of Queue ( Q ), veh/ln ( 95 th percentile)	4.8	2.3			10.2					4.0		3.2	
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.67	0.21			2.04					0.05		0.31	
Uniform Delay ( d <sub>1</sub> ), s/veh	43.7	6.5			15.6					32.5		25.4	
Incremental Delay ( d <sub>2</sub> ), s/veh	16.6	0.2			1.6					0.9		0.9	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0			0.0					0.0		0.0	
Control Delay ( d ), s/veh	60.3	6.6			17.2	0.0				33.4		26.3	
Level of Service ( LOS )	E	A			B	A				C		C	
Approach Delay, s/veh / LOS	17.4		B		11.5		B		0.0			31.2	C
Intersection Delay, s/veh / LOS	17.8						B						

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	0.67	A	2.09	B	2.15	B	2.15	B
Bicycle LOS Score / LOS	0.84	A	1.57	B				F

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 and Stonecreek	File Name	SR 39 AM.xus		
Project Description	AM No Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	80	320			410	200				200		90

Signal Information												
Cycle, s	100.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	9.0	51.0	22.0	0.0	0.0	0.0				
		Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
		Red	2.0	2.0	2.0	0.0	0.0	0.0				

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.891	0.891	1.000	1.000	0.961	1.000				0.977	1.000	0.977
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	0.952	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.971	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		1.000	1.000					0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		1.000	1.000		0.000	0.847					0.000	0.847
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000						1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000						1.000
Work Zone Adjustment Factor ( $f_{wz}$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00											
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )				1.00								
Movement Saturation Flow Rate (s), veh/h	1612	3304	0	0	1826	1610				3534	0	1572
Proportion of Vehicles Arriving on Green (P)	0.09	0.66	0.00	0.00	0.51	0.51	0.00	0.00	0.00	0.22	0.00	0.22
Incremental Delay Factor (k)	0.50	0.50			0.50	0.50				0.50		0.50

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0		6.0				4.0
Green Ratio ( $g/C$ )	0.09	0.66		0.51				0.22
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	0	0		1053				1767
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln				0				
Permitted Effective Green Time ( $g_p$ ), s	0.0	0.0		0.0				0.0
Permitted Service Time ( $g_u$ ), s	0.0	0.0		0.0				0.0
Permitted Queue Service Time ( $g_{ps}$ ), s								
Time to First Blockage ( $g_t$ ), s	0.0	0.0		51.0				0.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln				0				1572
Protected Right Effective Green Time ( $g_R$ ), s				0.0				9.0

Multimodal	EB			WB		NB		SB	
Pedestrian $F_w / F_v$	0.000	0.000	1.389	0.000	1.389	0.000	1.389	0.000	
Pedestrian $F_s / F_{delay}$	0.000	0.070	0.000	0.100	0.000	0.157	0.000	0.157	
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00		
Bicycle $c_b / d_b$	1319.98	5.78	1020.00	12.01		55.13		57.25	
Bicycle $F_w / F_v$	-3.64	0.35	-3.64	1.08	-3.64		-3.64	Infinity	

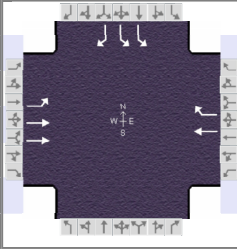


# HCS Signalized Intersection Results Graphical Summary

## General Information

Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 and Stonecreek	File Name	SR 39 AM.xus		
Project Description	AM No Build				

## Intersection Information



## Demand Information

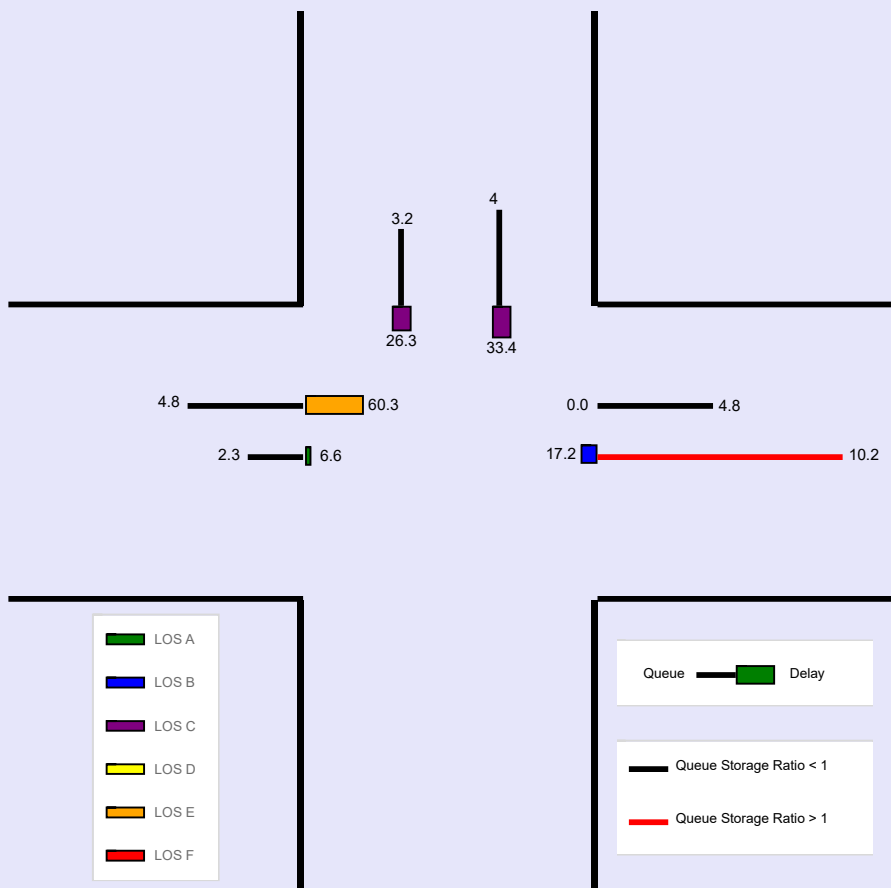
Approach Movement	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Demand ( v ), veh/h	80	320			410	200					200		90

## Signal Information

Cycle, s	100.0	Reference Phase	2											
Offset, s	0	Reference Point	End	Green	9.0	51.0	22.0	0.0	0.0	0.0	1	2	3	4
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0				

## Movement Group Results

Approach Movement	EB			WB			NB			SB				
	L	T	R	L	T	R	L	T	R	L	T	R		
Back of Queue ( Q ), ft/ln ( 95 th percentile)	134	64			265					103		82		
Back of Queue ( Q ), veh/ln ( 95 th percentile)	4.8	2.3			10.2					4.0		3.2		
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.67	0.21			2.04					0.05		0.31		
Control Delay ( d ), s/veh	60.3	6.6			17.2	0.0				33.4		26.3		
Level of Service ( LOS)	E	A			B	A				C		C		
Approach Delay, s/veh / LOS	17.4		B		11.5		B		0.0			31.2		C
Intersection Delay, s/veh / LOS	17.8						B							





**--- Messages ---**

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

WARNING: The Effective Sidewalk Width is computed as zero at segment 1, which causes the Average Pedestrian Space to be computed as zero. Please review inputs for accuracy

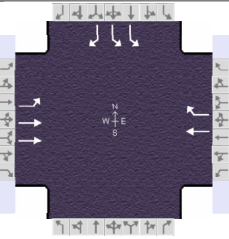




WARNING: The Effective Sidewalk Width is computed as zero at segment 2, which causes the Average Pedestrian Space to be computed as zero. Please review inputs for accuracy

INFO: WBR was specified to have Unsignalized Delay of 0 seconds.

**--- Comments ---**

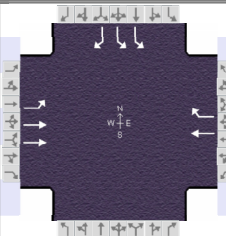


## HCS Signalized Intersection Input Data

General Information					Intersection Information											
Agency	Burgess & Niple				Duration, h	0.250										
Analyst	KB		Analysis Date	10/12/2023		Area Type	Other									
Jurisdiction			Time Period	PM Peak Hour		PHF	0.90									
Urban Street	SR 39		Analysis Year	2050		Analysis Period	1 > 17:00									
Intersection	SR 39 and Stonecreek		File Name	SR 39 PM.xus												
Project Description	PM No Build															
Demand Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h					120	620			530	260				370		150
Signal Information																
Cycle, s	150.0	Reference Phase	2		Green	14.0	96.0	22.0	0.0	0.0	0.0	0.0	1	2	3	4
Offset, s	0	Reference Point	End		Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0	5	6	7	8
Uncoordinated	Yes	Simult. Gap E/W	On		Red	2.0	2.0	2.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On													
Traffic Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h					120	620			530	260				370		150
Initial Queue (Q <sub>b</sub> ), veh/h					0	0			0	0				0		0
Base Saturation Flow Rate (s <sub>0</sub> ), veh/h					1900	1900			1900	1900				1900		1900
Parking (N <sub>m</sub> ), man/h						None			None						None	
Heavy Vehicles (P <sub>HV</sub> ), %					5	5			5	0				2		2
Ped / Bike / RTOR, /h					0	0		0	0	0	0	0	0	0	0	
Buses (N <sub>b</sub> ), buses/h					0	0	0	0	0	0				0	0	0
Arrival Type (AT)					3	3			3	3				3		3
Upstream Filtering (I)					1.00	1.00			0.96	0.96				1.00		1.00
Lane Width (W), ft					12.0	12.0			12.0	12.0				12.0		12.0
Turn Bay Length, ft					200	300			130	0				2000		260
Grade (P <sub>g</sub> ), %						0			0			0			0	
Speed Limit, mi/h					35	35			35	35				35		35
Phase Information					EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Maximum Green (G <sub>max</sub> ) or Phase Split, s					14.0	19.0		96.0				22.0				
Yellow Change Interval (Y), s					4.0	4.0		4.0				4.0				
Red Clearance Interval (R <sub>c</sub> ), s					2.0	2.0		2.0				2.0				
Minimum Green (G <sub>min</sub> ), s					6	6		6				6				
Start-Up Lost Time (I <sub>t</sub> ), s					2.0	2.0		2.0			2.0					
Extension of Effective Green (e), s					2.0	2.0		2.0			2.0					
Passage (PT), s					2.0	2.0		2.0				2.0				
Recall Mode					Off	Min		Min				Off				
Dual Entry					No	Yes		Yes				Yes				
Walk (Walk), s								0.0		0.0		0.0				
Pedestrian Clearance Time (PC), s								0.0		0.0		0.0				
Multimodal Information					EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius								0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft								9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft					0.0		No	0.0	0	No		0		0.0	0	No
Width Outside / Bike Lane / Shoulder, ft					12.0	5.0	2.0	12.0	5.0	2.0				12.0	5.0	2.0
Pedestrian Signal / Occupied Parking						0.50		No	0.50		No			No	0.50	

## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 and Stonecreek	File Name	SR 39 PM.xus		
Project Description	PM No Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	120	620			530	260				370		150

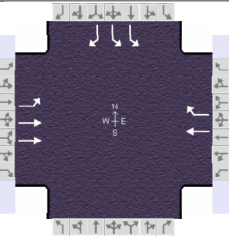
Signal Information														
Cycle, s	150.0	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On	Green	14.0	96.0	22.0	0.0	0.0	0.0	1	2	3	4
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8
				Red	2.0	2.0	2.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6				4
Case Number	2.0	4.0		7.3				9.0
Phase Duration, s	20.0	122.0		102.0				28.0
Change Period, ( $Y+R_c$ ), s	6.0	6.0		6.0				6.0
Max Allow Headway ( $MAH$ ), s	3.1	3.1		3.1				3.2
Queue Clearance Time ( $g_s$ ), s	13.3	10.4		26.0				19.3
Green Extension Time ( $g_e$ ), s	0.0	2.7		3.7				0.5
Phase Call Probability	1.00	1.00		1.00				1.00
Max Out Probability	1.00	0.29		0.00				1.00

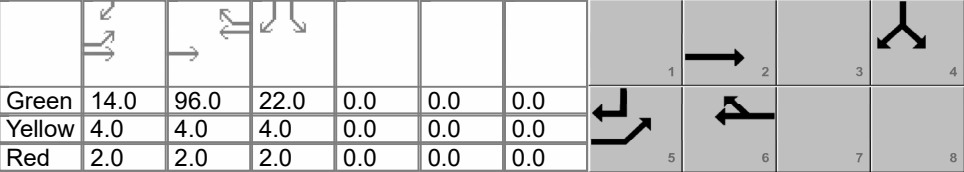
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16				7		14
Adjusted Flow Rate ( $v$ ), veh/h	133	689			562	276				411		167
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln	1739	1738			1826					1730		1585
Queue Service Time ( $g_s$ ), s	11.3	8.4			24.0					17.3		13.4
Cycle Queue Clearance Time ( $g_c$ ), s	11.3	8.4			24.0					17.3		13.4
Green Ratio ( $g/C$ )	0.09	0.77			0.64					0.15		0.24
Capacity ( $c$ ), veh/h	162	2688			1169					507		380
Volume-to-Capacity Ratio ( $X$ )	0.822	0.256			0.481					0.810		0.438
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)	266	128			382					327		232
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)	10.2	4.9			14.7					12.9		9.1
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)	1.33	0.43			2.93					0.16		0.89
Uniform Delay ( $d_1$ ), s/veh	66.8	4.8			14.0					62.0		48.4
Incremental Delay ( $d_2$ ), s/veh	25.9	0.0			0.1					8.9		0.3
Initial Queue Delay ( $d_3$ ), s/veh	0.0	0.0			0.0					0.0		0.0
Control Delay ( $d$ ), s/veh	92.7	4.8			14.1	0.0				70.9		48.7
Level of Service (LOS)	F	A			B	A				E		D
Approach Delay, s/veh / LOS	19.1	B		9.5	A		0.0			64.5		E
Intersection Delay, s/veh / LOS	27.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	0.65	A	2.08	B	2.16	B	2.16	B
Bicycle LOS Score / LOS	1.17	A	1.94	B				F

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information		
Agency	Burgess & Niple			Duration, h	0.250	
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other	
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90	
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00	
Intersection	SR 39 and Stonecreek	File Name	SR 39 PM.xus			
Project Description	PM No Build					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	120	620			530	260					370	150

Signal Information														
Cycle, s	150.0	Reference Phase	2	Green	14.0	96.0	22.0	0.0	0.0	0.0				
Offset, s	0	Reference Point	End	Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
Uncoordinated	Yes	Simult. Gap E/W	On	Red	2.0	2.0	2.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On											

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.961	0.961	1.000	1.000	0.961	1.000				0.984	1.000	0.984
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	0.952	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.971	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		1.000	1.000					0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		1.000	1.000		0.000	0.847					0.000	0.847
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000						1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000						1.000
Work Zone Adjustment Factor ( $f_{wz}$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00											
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )				1.00								
Movement Saturation Flow Rate (s), veh/h	1739	3564	0	0	1826	1610				3563	0	1585
Proportion of Vehicles Arriving on Green (P)	0.09	0.77	0.00	0.00	0.64	0.64	0.00	0.00	0.00	0.15	0.00	0.15
Incremental Delay Factor (k)	0.34	0.04			0.04	0.04				0.33		0.04

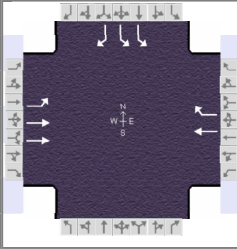
Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0		6.0				4.0
Green Ratio ( $g/C$ )	0.09	0.77		0.64				0.15
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	0	0		766				1781
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln				0				
Permitted Effective Green Time ( $g_p$ ), s	0.0	0.0		0.0				0.0
Permitted Service Time ( $g_u$ ), s	0.0	0.0		0.0				0.0
Permitted Queue Service Time ( $g_{ps}$ ), s								
Time to First Blockage ( $g_t$ ), s	0.0	0.0		96.0				0.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln				0				1585
Protected Right Effective Green Time ( $g_R$ ), s				0.0				14.0

Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	0.000	0.000	1.389	0.000	1.389	0.000	1.389	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.054	0.000	0.091	0.000	0.173	0.000	0.173
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$	1546.63	3.85	1280.00	9.72	-66.67	80.08	-93.33	82.16
Bicycle $F_w / F_v$	-3.64	0.68	-3.64	1.45	-3.64		-3.64	Infinity



# HCS Signalized Intersection Results Graphical Summary

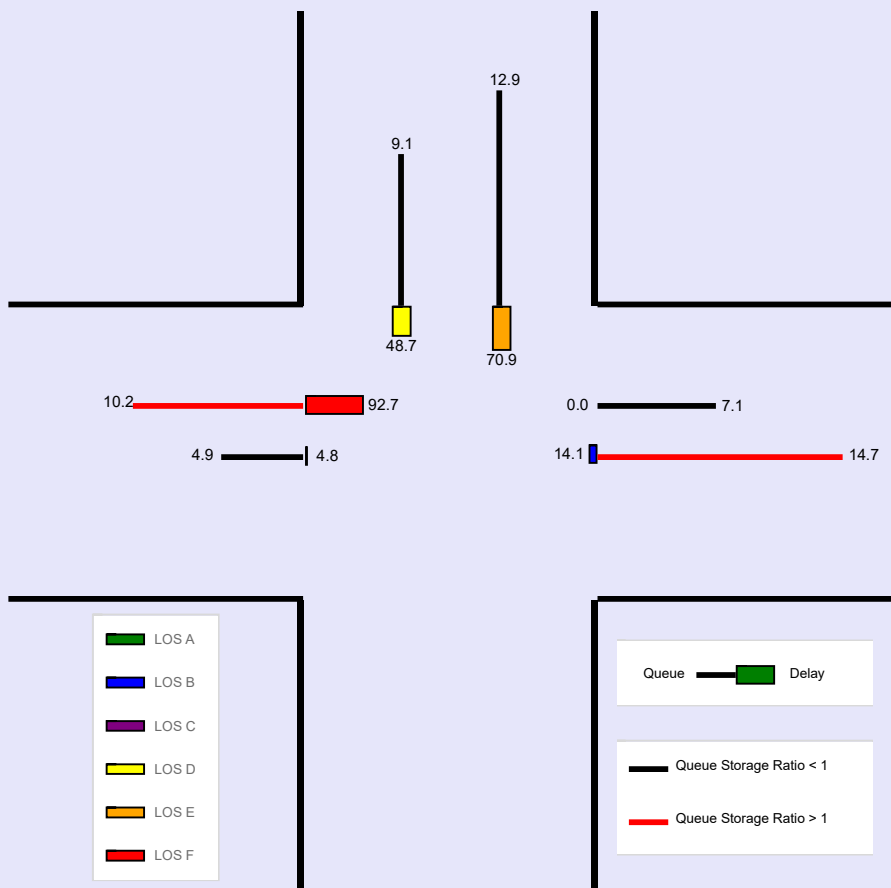
General Information				Intersection Information			
Agency	Burgess & Niple			Duration, h	0.250		
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other		
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90		
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00		
Intersection	SR 39 and Stonecreek		File Name	SR 39 PM.xus			
Project Description	PM No Build						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	120	620			530	260				370		150

Signal Information				Signal Phases										
Cycle, s	150.0	Reference Phase	2											
Offset, s	0	Reference Point	End	Green	14.0	96.0	22.0	0.0	0.0	0.0	1	2	3	4
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0				

Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Approach Movement													
Back of Queue ( Q ), ft/ln ( 95 th percentile)	266	128			382					327		232	
Back of Queue ( Q ), veh/ln ( 95 th percentile)	10.2	4.9			14.7					12.9		9.1	
Queue Storage Ratio ( RQ ) ( 95 th percentile)	1.33	0.43			2.93					0.16		0.89	
Control Delay ( d ), s/veh	92.7	4.8			14.1	0.0				70.9		48.7	
Level of Service ( LOS)	F	A			B	A				E		D	
Approach Delay, s/veh / LOS	19.1		B		9.5	A			0.0			64.5	E
Intersection Delay, s/veh / LOS	27.2						C						





**--- Messages ---**

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

WARNING: The Effective Sidewalk Width is computed as zero at segment 1, which causes the Average Pedestrian Space to be computed as zero. Please review inputs for accuracy

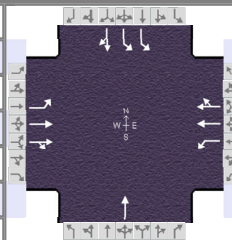
WARNING: The Effective Sidewalk Width is computed as zero at segment 2, which causes the Average Pedestrian Space to be computed as zero. Please review inputs for accuracy

INFO: WBR was specified to have Unsignalized Delay of 0 seconds.

**--- Comments ---**

## HCS Signalized Intersection Input Data

General Information				Intersection Information			
Agency	Burgess & Niple			Duration, h	0.250		
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other		
Jurisdiction		Time Period	AM Peak Hour	PHF	0.93		
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00		
Intersection	Stonecreek & SR 39	File Name	Scenario1_SBRamps_AM.xus				
Project Description	Build Alternative 1						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	80	230	90	250	340	160		0		410	50	160

Signal Information				Signal Timing and Phases										
Cycle, s	60.0	Reference Phase	2											
Offset, s	10	Reference Point	End											
Uncoordinated	No	Simult. Gap E/W	On											
Force Mode	Fixed	Simult. Gap N/S	On											
		Green	15.0	5.3	1.7	20.0	0.0	0.0						
		Yellow	4.0	4.0	0.0	4.0	0.0	0.0						
		Red	2.0	2.0	0.0	2.0	0.0	0.0						

Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	80	230	90	250	340	160		0		410	50	160
Initial Queue (Q <sub>b</sub> ), veh/h	0	0	0	0	0	0		0		0	0	0
Base Saturation Flow Rate (s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900		1900		1900	1900	1900
Parking (N <sub>m</sub> ), man/h		None			None			None			None	
Heavy Vehicles (P <sub>HV</sub> ), %	14	14		5	5			3		3	3	
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0		0	0	0
Buses (N <sub>b</sub> ), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (AT)	3	3	3	3	3	3		3		3	3	3
Upstream Filtering (I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.86	0.86	0.86
Lane Width (W), ft	12.0	12.0		12.0	12.0			12.0		12.0	12.0	
Turn Bay Length, ft	200	300		450	780			0		725	950	
Grade (P <sub>g</sub> ), %		0			0			0			0	
Speed Limit, mi/h	35	35	35	35	35	35		45		45	45	45

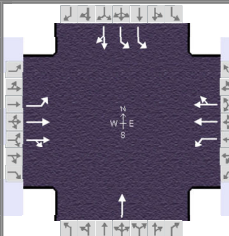
Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G <sub>max</sub> ) or Phase Split, s	13.0	26.0	13.0	26.0		21.0		21.0
Yellow Change Interval (Y), s	4.0	4.0	4.0	4.0		4.0		4.0
Red Clearance Interval (R <sub>c</sub> ), s	2.0	2.0	2.0	2.0		2.0		2.0
Minimum Green (G <sub>min</sub> ), s	7	20	7	20		10		10
Start-Up Lost Time (lt), s	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Extension of Effective Green (e), s	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Passage (PT), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Off	Off	Off		Min		Min
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk (Walk), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (PC), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	



## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak Hour	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	Stonecreek & SR 39	File Name	Scenario1_SBRamps_AM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( $v$ ), veh/h	80	230	90	250	340	160	0			410	50	160

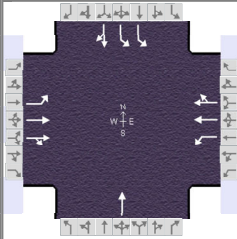
Signal Information													
Cycle, s	60.0	Reference Phase	2										
Offset, s	10	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	15.0	5.3	1.7	20.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	4.0	0.0	0.0			
				Red	2.0	2.0	0.0	2.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4		6		2
Case Number	2.0	4.0	1.1	4.0		8.0		6.0
Phase Duration, s	11.3	26.0	13.0	27.7		21.0		21.0
Change Period, ( $Y+R_c$ ), s	6.0	6.0	6.0	6.0		6.0		6.0
Max Allow Headway ( $MAH$ ), s	3.1	3.1	3.1	3.1		0.0		0.0
Queue Clearance Time ( $g_s$ ), s	5.1	6.9	8.0	9.2				
Green Extension Time ( $g_e$ ), s	0.0	1.6	0.0	1.5		0.0		0.0
Phase Call Probability	0.76	1.00	0.99	1.00				
Max Out Probability	1.00	0.02	1.00	0.03				

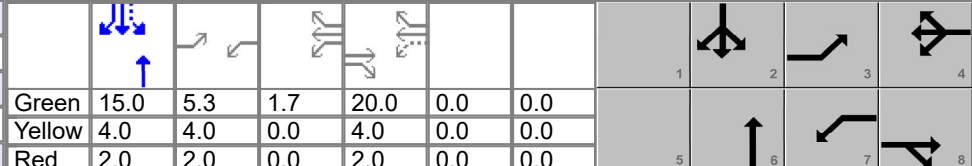
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14		6		5	2	12
Adjusted Flow Rate ( $v$ ), veh/h	86	177	167	269	281	256		0		441	226	
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln	1612	1693	1533	1739	1826	1629		1856		1716	1632	
Queue Service Time ( $g_s$ ), s	3.1	4.7	4.9	6.0	7.0	7.2		0.0		6.6	7.9	
Cycle Queue Clearance Time ( $g_c$ ), s	3.1	4.7	4.9	6.0	7.0	7.2		0.0		6.6	7.9	
Green Ratio ( $g/C$ )	0.09	0.33	0.33	0.45	0.36	0.36		0.25		0.25	0.25	
Capacity ( $c$ ), veh/h	143	564	511	578	659	588		464		1098	408	
Volume-to-Capacity Ratio ( $X$ )	0.601	0.314	0.327	0.465	0.426	0.436		0.000		0.402	0.553	
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)	57.9	80.2	76.2	91.1	118.7	110.5		0		115.9	157.7	
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)	2.1	2.9	2.7	3.5	4.6	4.2		0.0		4.5	6.2	
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)	0.29	0.27	0.25	0.20	0.15	0.14		0.00		0.16	0.17	
Uniform Delay ( $d_1$ ), s/veh	26.3	14.9	15.0	11.0	14.5	14.5		0.0		20.3	23.8	
Incremental Delay ( $d_2$ ), s/veh	1.5	0.1	0.1	0.2	0.2	0.2		0.0		0.9	4.6	
Initial Queue Delay ( $d_3$ ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay ( $d$ ), s/veh	27.8	15.0	15.1	11.2	14.6	14.7		0.0		21.2	28.4	
Level of Service (LOS)	C	B	B	B	B	B				C	C	
Approach Delay, s/veh / LOS	17.6		B	13.5		B		0.0		23.6		C
Intersection Delay, s/veh / LOS	18.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.68	B	2.09	B	2.27	B	2.27	B
Bicycle LOS Score / LOS	0.84	A	1.15	A	0.49	A	1.59	B

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information		
Agency	Burgess & Niple			Duration, h	0.250	
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other	
Jurisdiction		Time Period	AM Peak Hour	PHF	0.93	
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00	
Intersection	Stonecreek & SR 39	File Name	Scenario1_SBRamps_AM.xus			
Project Description	Build Alternative 1					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	80	230	90	250	340	160		0		410	50	160

Signal Information																
Cycle, s	60.0	Reference Phase	2	Green	15.0	5.3	1.7	20.0	0.0	0.0						
Offset, s	10	Reference Point	End	Yellow	4.0	4.0	0.0	4.0	0.0	0.0						
Uncoordinated	No	Simult. Gap E/W	On	Red	2.0	2.0	0.0	2.0	0.0	0.0						
Force Mode	Fixed	Simult. Gap N/S	On													

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.891	0.891	0.891	0.961	0.961	0.945	1.000	0.977	1.000	0.977	0.977	1.000
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.971	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		0.952	0.000		1.000	1.000		0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		0.906	0.906		0.892	0.892		0.000	1.000		0.879	0.879
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000			1.000			1.000
Work Zone Adjustment Factor ( $f_{WZ}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00			1.00								
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )							1.00			1.00		
Movement Saturation Flow Rate (s), veh/h	1612	2337	888	1739	2362	1093	0	1856	0	3534	389	1243
Proportion of Vehicles Arriving on Green (P)	0.09	0.33	0.33	0.12	0.36	0.36	0.00	0.00	0.00	0.21	0.06	0.11
Incremental Delay Factor (k)	0.04	0.04	0.04	0.04	0.04	0.04				0.50	0.50	

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0	6.0	6.0		6.0		6.0
Green Ratio ( $g/C$ )	0.09	0.33	0.45	0.36		0.25		0.25
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	0	0	1012	0		1173		1767
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln						0		
Permitted Effective Green Time ( $g_p$ ), s	0.0	0.0	20.0	0.0		0.0		15.0
Permitted Service Time ( $g_u$ ), s	0.0	0.0	15.1	0.0		0.0		15.0
Permitted Queue Service Time ( $g_{ps}$ ), s			1.8					6.8
Time to First Blockage ( $g_t$ ), s	0.0	0.0	0.0	0.0		15.0		0.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln								
Protected Right Effective Green Time ( $g_R$ ), s								

Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	0.972	0.000	1.389	0.000	1.557	0.000	1.557	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.104	0.000	0.100	0.000	0.113	0.000	0.113
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$	666.65	13.33	722.28	12.24	500.02	16.87	500.02	16.87
Bicycle $F_w / F_v$	-3.64	0.35	-3.64	0.67	-3.64	0.00	-3.64	1.10



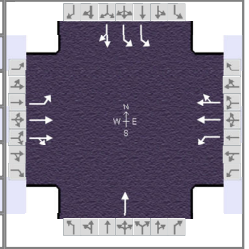
# HCS Signalized Intersection Results Graphical Summary

## General Information

Agency	Burgess & Niple		
Analyst	KB	Analysis Date	Jan 16, 2024
Jurisdiction		Time Period	AM Peak Hour
Urban Street	SR 39	Analysis Year	2050
Intersection	Stonecreek & SR 39	File Name	Scenario1_SBRamps_AM.xus
Project Description	Build Alternative 1		

## Intersection Information

Duration, h	0.250
Area Type	Other
PHF	0.93
Analysis Period	1 > 7:00



## Demand Information

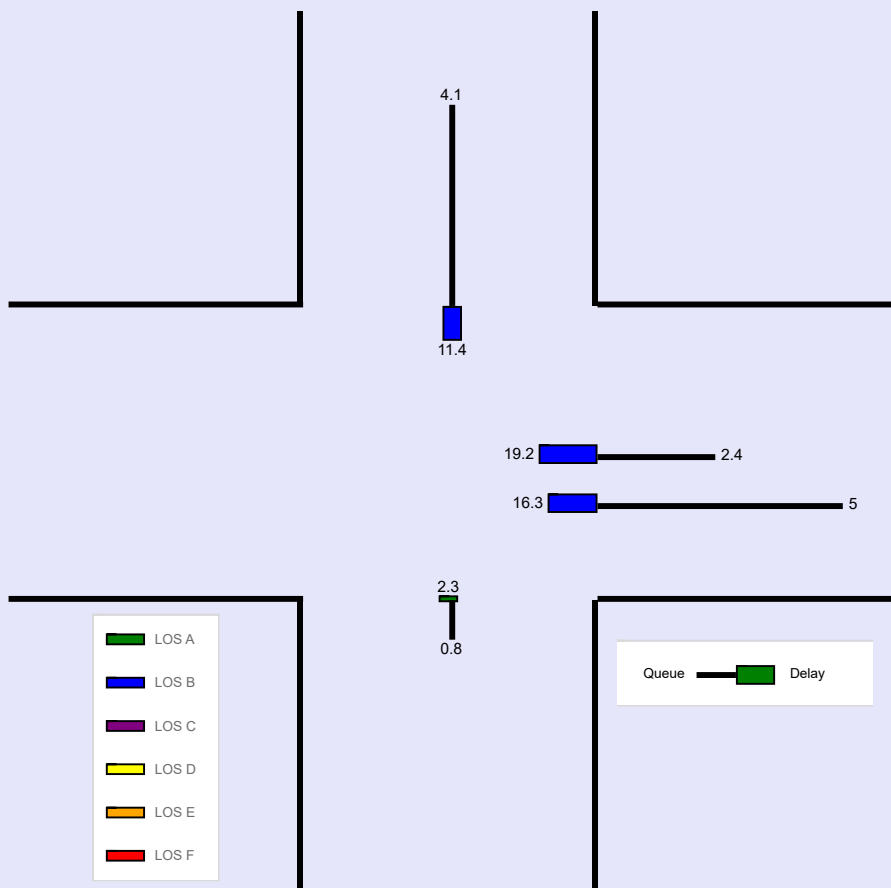
Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	80	230	90	250	340	160		0		410	50	160

## Signal Information

Cycle, s	60.0	Reference Phase	2																			
Offset, s	10	Reference Point	End																			
Uncoordinated	No	Simult. Gap E/W	On	Green	15.0	5.3	1.7	20.0	0.0	0.0	1			2			3			4		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	4.0	0.0	0.0	5			6			7			8		
				Red	2.0	2.0	0.0	2.0	0.0	0.0												

## Movement Group Results

Approach Movement	EB			WB			NB			SB											
	L	T	R	L	T	R	L	T	R	L	T	R									
Back of Queue (Q), ft/ln (95 th percentile)	57.9	80.2	76.2	91.1	118.7	110.5		0		115.9	157.7										
Back of Queue (Q), veh/ln (95 th percentile)	2.1	2.9	2.7	3.5	4.6	4.2		0.0		4.5	6.2										
Queue Storage Ratio (RQ) (95 th percentile)	0.29	0.27	0.25	0.20	0.15	0.14		0.00		0.16	0.17										
Control Delay (d), s/veh	27.8	15.0	15.1	11.2	14.6	14.7		0.0		21.2	28.4										
Level of Service (LOS)	C	B	B	B	B	B				C	C										
Approach Delay, s/veh / LOS	17.6			B			13.5			B			0.0			23.6			C		
Intersection Delay, s/veh / LOS	18.0						B														



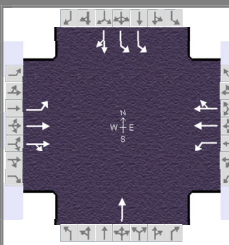
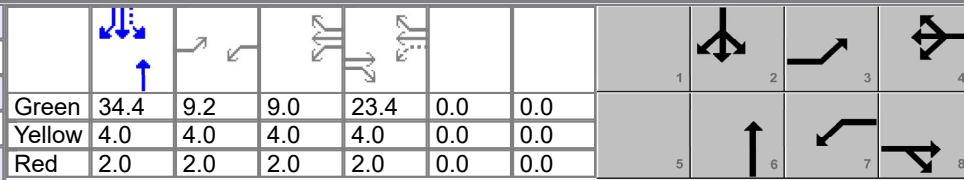


**--- Messages ---**

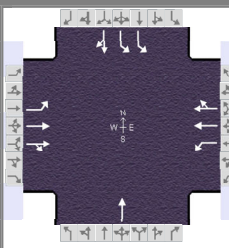
No errors or warnings exist.

**--- Comments ---**

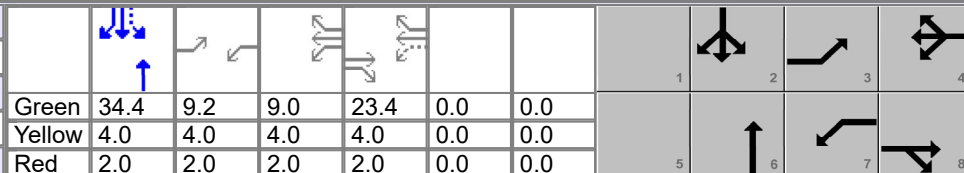
## HCS Signalized Intersection Input Data

General Information					Intersection Information																		
Agency	Burgess & Niple				Duration, h	0.250																	
Analyst	KB	Analysis Date	Jan 16, 2024		Area Type	Other																	
Jurisdiction		Time Period	PM Peak Hour		PHF	0.90																	
Urban Street	SR 39	Analysis Year	2050		Analysis Period	1 > 17:00																	
Intersection	Stonecreek & SR 39	File Name	Scenario1_SBRamps_PM.xus																				
Project Description	Build Alternative 1																						
Demand Information					EB			WB			NB			SB									
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R							
Demand ( v ), veh/h					120	430	190	450	430	210		0		670	120	250							
Signal Information										1		2		3		4							
Cycle, s	100.0	Reference Phase	2							5		6		7		8							
Offset, s	56	Reference Point	End							Green		34.4		9.2		9.0		23.4		0.0		0.0	
Uncoordinated	No	Simult. Gap E/W	On							Yellow		4.0		4.0		4.0		0.0		0.0			
Force Mode	Fixed	Simult. Gap N/S	On		Red		2.0		2.0		2.0		2.0		0.0		0.0						
Traffic Information					EB			WB			NB			SB									
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R							
Demand ( v ), veh/h					120	430	190	450	430	210		0		670	120	250							
Initial Queue ( Q <sub>b</sub> ), veh/h					0	0	0	0	0	0		0		0	0	0							
Base Saturation Flow Rate ( s <sub>0</sub> ), veh/h					1900	1900	1900	1900	1900	1900		1900		1900	1900	1900							
Parking ( N <sub>m</sub> ), man/h					None			None			None			None									
Heavy Vehicles ( P <sub>HV</sub> ), %					1	1		3	3			2		2	2								
Ped / Bike / RTOR, /h					0	0	0	0	0	0	0	0	0	0	0	0							
Buses ( N <sub>b</sub> ), buses/h					0	0	0	0	0	0	0	0	0	0	0	0							
Arrival Type ( AT )					3	3	3	3	3	3		3		3	3	3							
Upstream Filtering ( I )					1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.14	0.14	0.14							
Lane Width ( W ), ft					12.0	12.0		12.0	12.0			12.0		12.0	12.0								
Turn Bay Length, ft					200	300		450	780			0		725	950								
Grade ( P <sub>g</sub> ), %						0			0			0			0								
Speed Limit, mi/h					35	35	35	35	35	35		45		45	45	45							
Phase Information					EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT											
Maximum Green ( G <sub>max</sub> ) or Phase Split, s					35.0	26.0	55.0	46.0		19.0		19.0											
Yellow Change Interval ( Y ), s					4.0	4.0	4.0	4.0		4.0		4.0											
Red Clearance Interval ( R <sub>c</sub> ), s					2.0	2.0	2.0	2.0		2.0		2.0											
Minimum Green ( G <sub>min</sub> ), s					7	20	7	20		10		10											
Start-Up Lost Time ( l <sub>t</sub> ), s					2.0	2.0	2.0	2.0		2.0	2.0	2.0											
Extension of Effective Green ( e ), s					2.0	2.0	2.0	2.0		2.0	2.0	2.0											
Passage ( P <sub>T</sub> ), s					2.0	2.0	2.0	2.0		2.0		2.0											
Recall Mode					Off	Off	Off	Off		Min		Min											
Dual Entry					No	Yes	No	Yes		Yes		Yes											
Walk ( Walk ), s						0.0		0.0		0.0		0.0											
Pedestrian Clearance Time ( P <sub>C</sub> ), s						0.0		0.0		0.0		0.0											
Multimodal Information					EB			WB			NB			SB									
85th % Speed / Rest in Walk / Corner Radius					0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0							
Walkway / Crosswalk Width / Length, ft					9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0							
Street Width / Island / Curb, ft					0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No							
Width Outside / Bike Lane / Shoulder, ft					12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0							
Pedestrian Signal / Occupied Parking					No	0.50	No	0.50	No	0.50	No	0.50	No	0.50									

## HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Burgess & Niple			Duration, h	0.250	
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other	
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90	
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00	
Intersection	Stonecreek & SR 39	File Name	Scenario1_SBRamps_PM.xus			
Project Description	Build Alternative 1					

Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	120	430	190	450	430	210		0		670	120	250

Signal Information														
Cycle, s	100.0	Reference Phase	2	Green	34.4	9.2	9.0	23.4	0.0	0.0				
Offset, s	56	Reference Point	End	Yellow	4.0	4.0	4.0	4.0	0.0	0.0				
Uncoordinated	No	Simult. Gap E/W	On	Red	2.0	2.0	2.0	2.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On											

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4		6		2
Case Number	2.0	4.0	1.1	4.0		8.0		6.0
Phase Duration, s	15.2	29.4	30.3	44.4		40.4		40.4
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0		6.0		6.0
Max Allow Headway ( MAH ), s	3.1	3.1	3.1	3.1		0.0		0.0
Queue Clearance Time ( g <sub>s</sub> ), s	9.3	20.4	23.3	17.8				
Green Extension Time ( g <sub>e</sub> ), s	0.2	2.9	1.0	3.0		0.0		0.0
Phase Call Probability	0.98	1.00	1.00	1.00				
Max Out Probability	0.00	0.01	0.00	0.00				

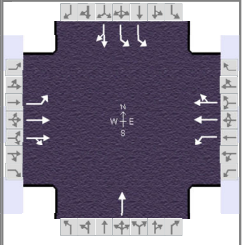
Movement Group Results	EB			WB			NB			SB				
	L	T	R	L	T	R	L	T	R	L	T	R		
Assigned Movement	3	8	18	7	4	14		6		5	2	12		
Adjusted Flow Rate ( v ), veh/h	133	362	327	500	375	336		0		630	348			
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1795	1885	1689	1767	1856	1649		1870		1730	1668			
Queue Service Time ( g <sub>s</sub> ), s	7.3	18.2	18.4	21.3	15.6	15.8		0.0		13.2	11.4			
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	7.3	18.2	18.4	21.3	15.6	15.8		0.0		13.2	11.4			
Green Ratio ( g/C )	0.09	0.23	0.23	0.50	0.38	0.38		0.34		0.34	0.34			
Capacity ( c ), veh/h	166	440	394	538	712	633		643		1332	573			
Volume-to-Capacity Ratio ( X )	0.803	0.822	0.829	0.929	0.526	0.531		0.000		0.473	0.607			
Back of Queue ( Q ), ft/ln ( 95 th percentile)	151.5	329	304.4	352.9	277.8	263.2		0		160.6	100.1			
Back of Queue ( Q ), veh/ln ( 95 th percentile)	6.0	13.1	12.1	13.8	10.9	10.0		0.0		6.3	3.9			
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.76	1.10	1.01	0.78	0.36	0.33		0.00		0.22	0.11			
Uniform Delay ( d <sub>1</sub> ), s/veh	44.5	36.4	36.4	23.2	23.8	23.8		0.0		23.2	12.4			
Incremental Delay ( d <sub>2</sub> ), s/veh	3.4	1.5	1.7	4.0	0.2	0.3		0.0		0.2	0.7			
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0			
Control Delay ( d ), s/veh	47.9	37.8	38.2	27.3	24.0	24.1		0.0		23.4	13.1			
Level of Service ( LOS )	D	D	D	C	C	C				C	B			
Approach Delay, s/veh / LOS	39.6			D			25.4	C			0.0	19.7		B
Intersection Delay, s/veh / LOS	27.4						C							

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.71	B	2.11	B	2.28	B	2.28	B
Bicycle LOS Score / LOS	1.17	A	1.49	A	0.49	A	2.39	B



## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	Stonecreek & SR 39	File Name	Scenario1_SBRamps_PM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	120	430	190	450	430	210		0		670	120	250

Signal Information													
Cycle, s	100.0	Reference Phase	2										
Offset, s	56	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	34.4	9.2	9.0	23.4	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	4.0	0.0	0.0			
				Red	2.0	2.0	2.0	2.0	0.0	0.0			

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.992	0.992	0.992	0.977	0.977	0.945	1.000	0.984	1.000	0.984	0.984	1.000
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.971	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		0.952	0.000		1.000	1.000		0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		0.896	0.896		0.889	0.889		0.000	1.000		0.892	0.892
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000			1.000			1.000
Work Zone Adjustment Factor ( $f_{WZ}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00			1.00								
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )							1.00			1.00		
Movement Saturation Flow Rate (s), veh/h	1795	2484	1090	1767	2360	1145	0	1870	0	3563	541	1127
Proportion of Vehicles Arriving on Green (P)	0.09	0.23	0.23	0.24	0.38	0.38	0.00	0.00	0.00	0.41	0.79	0.62
Incremental Delay Factor (k)	0.04	0.04	0.04	0.05	0.04	0.04				0.50	0.50	

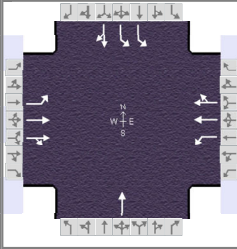
Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0	6.0	6.0		6.0		6.0
Green Ratio ( $g/C$ )	0.09	0.23	0.50	0.38		0.34		0.34
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	0	0	748	0		1049		1781
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln						0		
Permitted Effective Green Time ( $g_p$ ), s	0.0	0.0	25.4	0.0		0.0		34.4
Permitted Service Time ( $g_u$ ), s	0.0	0.0	4.9	0.0		0.0		34.4
Permitted Queue Service Time ( $g_{ps}$ ), s			4.9					12.4
Time to First Blockage ( $g_t$ ), s	0.0	0.0	0.0	0.0		34.4		0.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln								
Protected Right Effective Green Time ( $g_R$ ), s								

Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	0.972	0.000	1.389	0.000	1.557	0.000	1.557	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.136	0.000	0.118	0.000	0.123	0.000	0.123
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$	467.04	29.37	767.85	18.98	687.19	21.54	687.19	21.54
Bicycle $F_w / F_v$	-3.64	0.68	-3.64	1.00	-3.64	0.00	-3.64	1.91



# HCS Signalized Intersection Results Graphical Summary

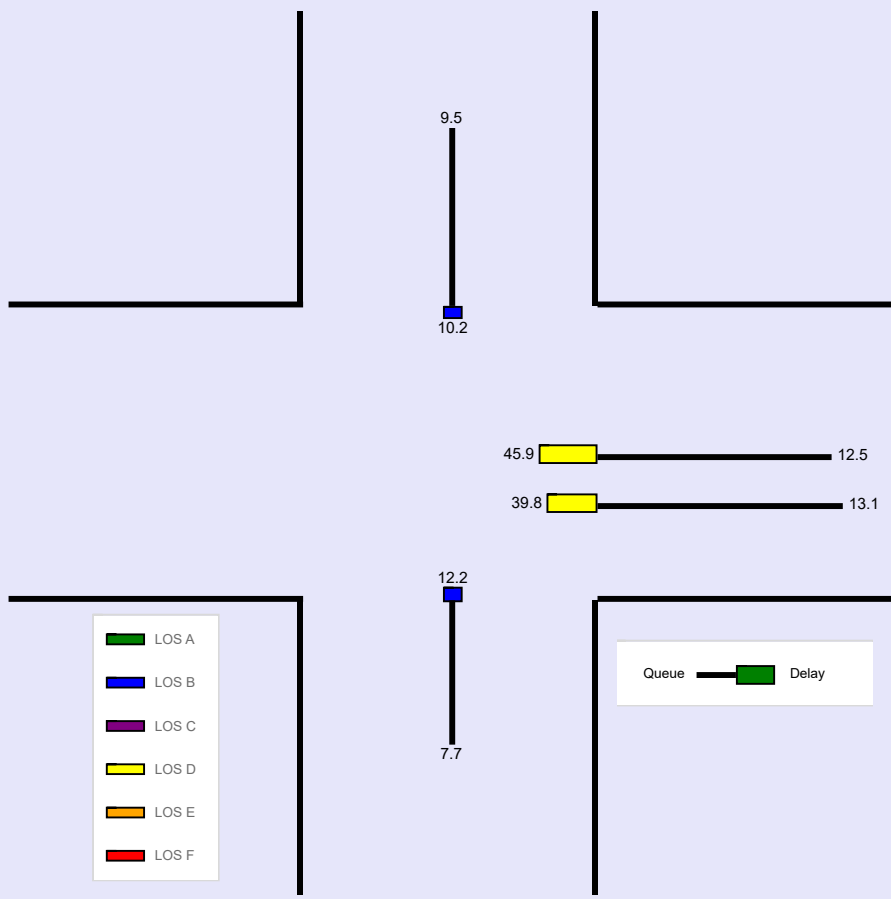
General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	Stonecreek & SR 39	File Name	Scenario1_SBRamps_PM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	120	430	190	450	430	210		0		670	120	250

Signal Information				Phase Diagrams								
Cycle, s	100.0	Reference Phase	2									
Offset, s	56	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	34.4	9.2	9.0	23.4	0.0	0.0				
		Yellow	4.0	4.0	4.0	4.0	0.0	0.0				
		Red	2.0	2.0	2.0	2.0	0.0	0.0				

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Back of Queue ( Q ), ft/ln ( 95 th percentile)	151.5	329	304.4	352.9	277.8	263.2		0		160.6	100.1	
Back of Queue ( Q ), veh/ln ( 95 th percentile)	6.0	13.1	12.1	13.8	10.9	10.0		0.0		6.3	3.9	
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.76	1.10	1.01	0.78	0.36	0.33		0.00		0.22	0.11	
Control Delay ( d ), s/veh	47.9	37.8	38.2	27.3	24.0	24.1		0.0		23.4	13.1	
Level of Service ( LOS)	D	D	D	C	C	C				C	B	
Approach Delay, s/veh / LOS	39.6			D			25.4			C		
Intersection Delay, s/veh / LOS	27.4						C					



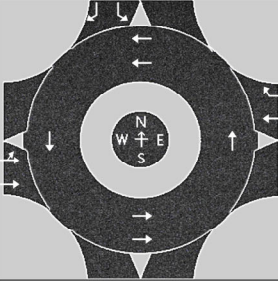


**--- Messages ---**

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

**--- Comments ---**

# HCS Roundabouts Report

General Information				Site Information				
Analyst	Sonja Summer				Intersection	SR 39 & Stonecreek		
Agency or Co.	B&N				E/W Street Name	SR 39		
Date Performed	11/28/2023				N/S Street Name	Stonecreek		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	AM Peak Hour				Peak Hour Factor	0.93		
Project Description	Build Alternative 2				Jurisdiction			

## Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	2	0	0	0	1	1	0	0	0	0	0	1	0	1
Lane Assignment	LT		T		T		R						L		R	
Volume (V), veh/h	0	80	320		0		410	200					0	200		90
Percent Heavy Vehicles, %	14	14	14		5		5	5					3	3		3
Flow Rate (v <sub>PCE</sub> ), pc/h	0	98	392		0		463	226					0	222		100
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1								2			
Pedestrians Crossing, p/h	0				0								0			
Proportion of CAVs	0															

## Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.5436	4.5436		4.5436	4.5436					4.6453	4.3276	
Follow-Up Headway, s	2.5352	2.5352		2.5352	2.5352					2.6667	2.5352	

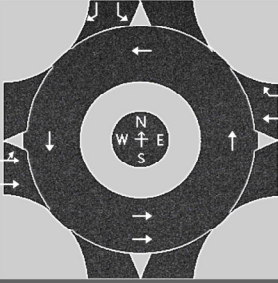
## Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	230	260		463	226					222	100	
Entry Volume, veh/h	202	228		441	215					216	97	
Circulating Flow (v <sub>c</sub> ), pc/h	222			98			712			463		
Exiting Flow (v <sub>e</sub> ), pc/h	614			563			324			0		
Capacity (c <sub>PCE</sub> ), pc/h	1160	1160		1299	1299					882	958	
Capacity (c), veh/h	1018	1018		1237	1237					856	930	
v/c Ratio (x)	0.20	0.22		0.36	0.17					0.25	0.10	

## Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	5.4	5.7		6.3	4.4					6.9	4.8	
Lane LOS	A	A		A	A					A	A	
95% Queue, veh	0.7	0.9		1.6	0.6					1.0	0.3	
Approach Delay, s/veh   LOS	5.5		A	5.7		A				6.2		A
Intersection Delay, s/veh   LOS	5.8						A					

# HCS Roundabouts Report

General Information				Site Information				
Analyst	Sonja Summer				Intersection	SR 39 & Stonecreek		
Agency or Co.	B&N				E/W Street Name	SR 39		
Date Performed	11/28/2023				N/S Street Name	Stonecreek		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	PM Peak Hour				Peak Hour Factor	0.90		
Project Description	Build Alternative 2				Jurisdiction			

## Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	2	0	0	0	1	1	0	0	0	0	0	1	0	1
Lane Assignment	LT		T		T		R						L		R	
Volume (V), veh/h	0	120	620		0		530	260					0	370		150
Percent Heavy Vehicles, %	5	5	5		5		5	5					2	2		2
Flow Rate (V <sub>PCE</sub> ), pc/h	0	140	723		0		618	303					0	419		170
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1								1			
Pedestrians Crossing, p/h	0				0								0			
Proportion of CAVs	0															

## Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.5436	4.5436		4.5436	4.5436					4.5436	4.5436	
Follow-Up Headway, s	2.5352	2.5352		2.5352	2.5352					2.5352	2.5352	

## Flow Computations, Capacity and v/c Ratios

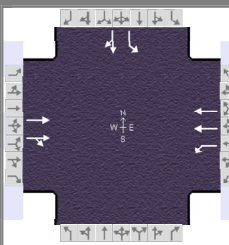
Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	406	457		618	303					419	170	
Entry Volume, veh/h	386	436		589	289					411	167	
Circulating Flow (v <sub>c</sub> ), pc/h	419			140			1282			618		
Exiting Flow (v <sub>e</sub> ), pc/h	1142			788			443			0		
Capacity (C <sub>PCE</sub> ), pc/h	970	970		1250	1250					809	809	
Capacity (c), veh/h	924	924		1191	1191					793	793	
v/c Ratio (x)	0.42	0.47		0.49	0.24					0.52	0.21	

## Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	8.8	9.7		8.4	5.2					11.9	6.8	
Lane LOS	A	A		A	A					B	A	
95% Queue, veh	2.1	2.6		2.8	1.0					3.0	0.8	
Approach Delay, s/veh   LOS	9.3		A	7.4		A				10.4		B
Intersection Delay, s/veh   LOS	8.8						A					

## HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & SB I-77 Ramps		File Name	SR 39 AM.xus	
Project Description	AM No Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		380	140	250	500					260	10	110

Signal Information													
Cycle, s	130.0	Reference Phase	2										
Offset, s	87	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On										
Force Mode	Fixed	Simult. Gap N/S	On										
		Green		21.7	67.2	23.0	0.0	0.0	0.0				
		Yellow		4.0	4.0	4.0	0.0	0.0	0.0				
		Red		2.0	2.0	2.0	0.0	0.0	0.0				

Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		380	140	250	500					260	10	110
Initial Queue (Q <sub>b</sub> ), veh/h		0	0	0	0					0	0	0
Base Saturation Flow Rate (s <sub>0</sub> ), veh/h		1900	1900	1900	1900					1900	1900	1900
Parking (N <sub>m</sub> ), man/h		None			None						None	
Heavy Vehicles (P <sub>HV</sub> ), %		8		9	9					7	7	
Ped / Bike / RTOR, /h	0	0	0	0	0		0	0		0	0	0
Buses (N <sub>b</sub> ), buses/h	0	0	0	0	0	0				0	0	0
Arrival Type (AT)		3	3	3	3					3	3	3
Upstream Filtering (I)		0.99	0.99	0.73	0.73					1.00	1.00	1.00
Lane Width (W), ft		12.0		12.0	12.0					12.0	12.0	
Turn Bay Length, ft		100		340	750					950	200	
Grade (P <sub>g</sub> ), %		0			0			0			0	
Speed Limit, mi/h		35	35	35	35					35	35	35

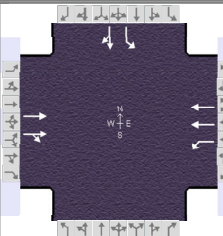
Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G <sub>max</sub> ) or Phase Split, s		61.0	39.0	100.0				30.0
Yellow Change Interval (Y), s		4.0	4.0	4.0				4.0
Red Clearance Interval (R <sub>c</sub> ), s		2.0	2.0	2.0				2.0
Minimum Green (G <sub>min</sub> ), s		6	6	6				6
Start-Up Lost Time (lt), s		2.0	2.0	2.0			2.0	2.0
Extension of Effective Green (e), s		2.0	2.0	2.0			2.0	2.0
Passage (PT), s		2.0	2.0	2.0				2.0
Recall Mode		Min	Off	Min				Off
Dual Entry		Yes	No	Yes				Yes
Walk (Walk), s				0.0		0.0		0.0
Pedestrian Clearance Time (PC), s				0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius				0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft				9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0		No	0.0	0	No		0		0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0				12.0	5.0	2.0
Pedestrian Signal / Occupied Parking			0.50		No	0.50		No			No	0.50



## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & SB I-77 Ramps		File Name	SR 39 AM.xus	
Project Description	AM No Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h		380	140	250	500					260	10	110

Signal Information													
Cycle, s	130.0	Reference Phase	2										
Offset, s	87	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On										
Force Mode	Fixed	Simult. Gap N/S	On										
		Green	21.7	67.2	23.0	0.0	0.0	0.0	0.0				
		Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0				
		Red	2.0	2.0	2.0	0.0	0.0	0.0	0.0				

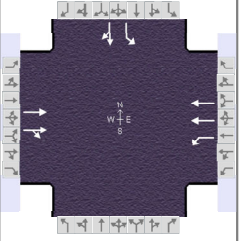
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6				8
Case Number		8.3	2.0	4.0				10.0
Phase Duration, s		73.2	27.7	101.0				29.0
Change Period, ( $Y+R_c$ ), s		6.0	6.0	6.0				6.0
Max Allow Headway ( $MAH$ ), s		0.0	3.1	0.0				3.2
Queue Clearance Time ( $g_s$ ), s			21.3					22.9
Green Extension Time ( $g_e$ ), s		0.0	0.4	0.0				0.1
Phase Call Probability			1.00					1.00
Max Out Probability			0.00					1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6					3	8	18
Adjusted Flow Rate ( $v$ ), veh/h		291	268	255	510					280	129	
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln		1781	1618	1682	1682					1711	1542	
Queue Service Time ( $g_s$ ), s		14.4	12.5	19.3	6.3					20.9	9.8	
Cycle Queue Clearance Time ( $g_c$ ), s		14.4	12.5	19.3	6.3					20.9	9.8	
Green Ratio ( $g/C$ )		0.52	0.52	0.17	0.73					0.18	0.18	
Capacity ( $c$ ), veh/h		921	837	281	2457					303	273	
Volume-to-Capacity Ratio ( $X$ )		0.315	0.321	0.907	0.208					0.923	0.473	
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)		237.1	210.6	346.9	98.4					447.8	179.7	
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)		8.9	8.4	12.9	3.7					17.0	6.8	
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)		2.37	2.24	1.02	0.13					0.47	0.90	
Uniform Delay ( $d_1$ ), s/veh		18.1	18.2	53.1	5.6					52.6	48.0	
Incremental Delay ( $d_2$ ), s/veh		0.9	1.0	8.6	0.1					30.0	0.5	
Initial Queue Delay ( $d_3$ ), s/veh		0.0	0.0	0.0	0.0					0.0	0.0	
Control Delay ( $d$ ), s/veh		19.0	19.2	61.8	5.7					82.6	48.5	
Level of Service ( LOS )		B	B	E	A					F	D	
Approach Delay, s/veh / LOS	19.1	B		24.4	C		0.0				71.9	E
Intersection Delay, s/veh / LOS	33.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.39	A	1.63	B	2.32	B	2.16	B
Bicycle LOS Score / LOS	0.95	A	1.15	A			1.16	A

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & SB I-77 Ramps	File Name	SR 39 AM.xus		
Project Description	AM No Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		380	140	250	500					260	10	110

Signal Information														
Cycle, s	130.0	Reference Phase	2	Green	21.7	67.2	23.0	0.0	0.0	0.0	1	2	3	4
Offset, s	87	Reference Point	End	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8
Uncoordinated	No	Simult. Gap E/W	On	Red	2.0	2.0	2.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On											

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	1.000	0.938	1.000	0.930	0.930	1.000				0.945	0.945	1.000
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	0.952	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	1.000	1.000		0.952	0.000					0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		0.908	0.908		1.000	1.000					0.858	0.858
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000						1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000						1.000
Work Zone Adjustment Factor ( $f_{WZ}$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )				1.00								
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )	1.00											
Movement Saturation Flow Rate (s), veh/h	0	2492	907	1682	3448	0				1711	128	1413
Proportion of Vehicles Arriving on Green (P)	0.00	0.52	0.52	0.17	0.73	0.00	0.00	0.00	0.00	0.18	0.18	0.18
Incremental Delay Factor (k)		0.50	0.50	0.11	0.50					0.39	0.04	

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )		6.0	6.0	6.0				4.0
Green Ratio ( $g/C$ )		0.52	0.17	0.73				0.18
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln		904	0	0				1711
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln		0						
Permitted Effective Green Time ( $g_p$ ), s		0.0	0.0	0.0				0.0
Permitted Service Time ( $g_u$ ), s		0.0	0.0	0.0				0.0
Permitted Queue Service Time ( $g_{ps}$ ), s								
Time to First Blockage ( $g_t$ ), s		67.2	0.0	0.0				0.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln								
Protected Right Effective Green Time ( $g_R$ ), s								

Multimodal	EB			WB			NB		SB	
Pedestrian $F_w / F_v$	0.681	0.000	0.972	0.000	1.557	0.000	1.389	0.000		
Pedestrian $F_s / F_{delay}$	0.000	0.109	0.000	0.062	0.000	0.167	0.000	0.167		
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00			
Bicycle $c_b / d_b$	1034.55	15.15	1461.18	4.72	-76.92	70.10		72.19		
Bicycle $F_w / F_v$	-3.64	0.46	-3.64	0.67	-3.64		-3.64	0.67		



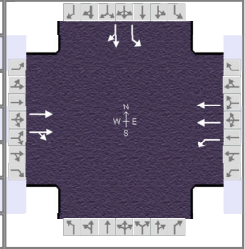
# HCS Signalized Intersection Results Graphical Summary

## General Information

Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & SB I-77 Ramps	File Name	SR 39 AM.xus		
Project Description	AM No Build				

## Intersection Information

Duration, h	0.250
Area Type	Other
PHF	0.93
Analysis Period	1 > 7:00



## Demand Information

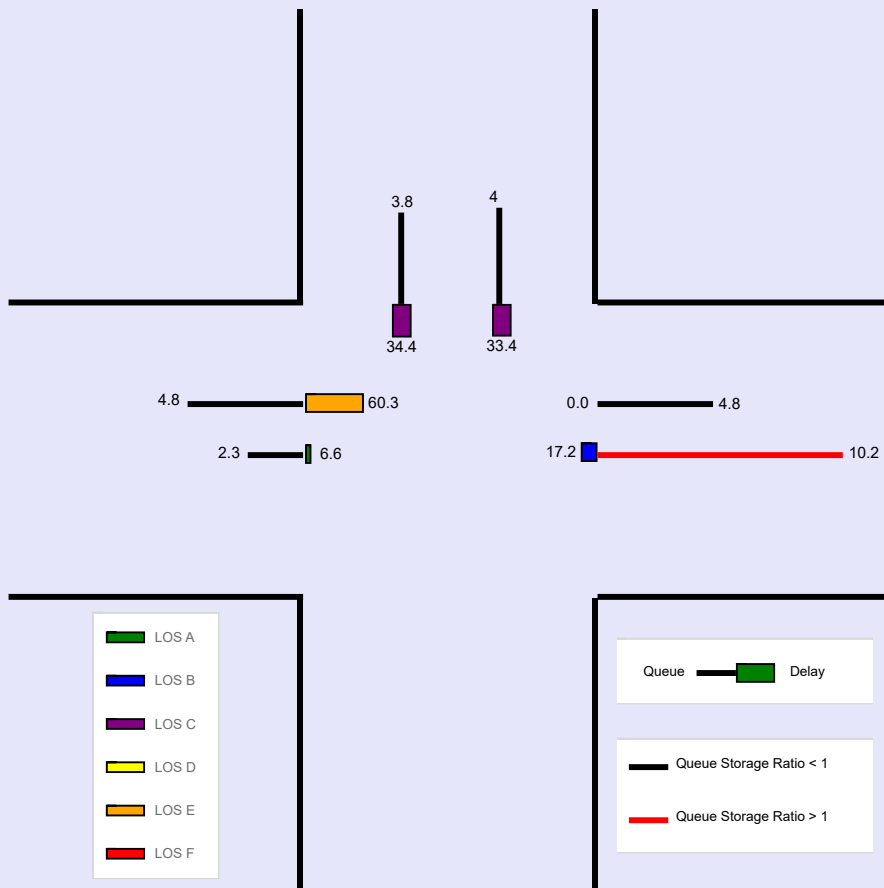
Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h		380	140	250	500					260	10	110

## Signal Information

Cycle, s	130.0	Reference Phase	2										
Offset, s	87	Reference Point	End	Green	21.7	67.2	23.0	0.0	0.0	0.0			
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0			

## Movement Group Results

Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue ( Q ), ft/ln ( 95 th percentile)		237.1	210.6	346.9	98.4					447.8	179.7	
Back of Queue ( Q ), veh/ln ( 95 th percentile)		8.9	8.4	12.9	3.7					17.0	6.8	
Queue Storage Ratio ( RQ ) ( 95 th percentile)		2.37	2.24	1.02	0.13					0.47	0.90	
Control Delay ( d ), s/veh		19.0	19.2	61.8	5.7					82.6	48.5	
Level of Service ( LOS)		B	B	E	A					F	D	
Approach Delay, s/veh / LOS	19.1	B		24.4	C		0.0				71.9	E
Intersection Delay, s/veh / LOS	33.9						C					





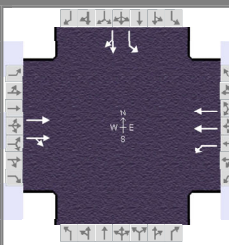
**--- Messages ---**

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

**--- Comments ---**

## HCS Signalized Intersection Input Data

General Information				Intersection Information			
Agency	Burgess & Niple			Duration, h	0.250		
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other		
Jurisdiction		Time Period	PM Peak Hour	PHF	0.96		
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00		
Intersection	SR 39 & SB I-77 Ramps		File Name	SR 39 PM.xus			
Project Description	PM No Build						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		680	310	450	640					420	10	150

Signal Information											
Cycle, s	150.0	Reference Phase	2								
Offset, s	76	Reference Point	End								
Uncoordinated	No	Simult. Gap E/W	On	Green	35.0	71.0	29.0	0.0	0.0	0.0	
Force Mode	Float	Simult. Gap N/S	On	Yellow	3.0	3.0	3.0	0.0	0.0	0.0	
				Red	2.0	2.0	2.0	0.0	0.0	0.0	

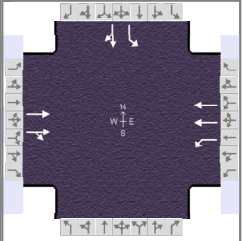
Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		680	310	450	640					420	10	150
Initial Queue (Q <sub>b</sub> ), veh/h		0	0	0	0					0	0	0
Base Saturation Flow Rate (s <sub>0</sub> ), veh/h		1900	1900	1900	1900					1900	1900	1900
Parking (N <sub>m</sub> ), man/h		None			None						None	
Heavy Vehicles (P <sub>HV</sub> ), %		1		3	3					5	5	
Ped / Bike / RTOR, /h	0	0	0	0	0		0	0		0	0	0
Buses (N <sub>b</sub> ), buses/h	0	0	0	0	0	0				0	0	0
Arrival Type (AT)		3	3	3	3					3	3	3
Upstream Filtering (I)		0.88	0.88	0.47	0.47					1.00	1.00	1.00
Lane Width (W), ft		12.0		12.0	12.0					12.0	12.0	
Turn Bay Length, ft		100		340	750					950	200	
Grade (P <sub>g</sub> ), %		0			0			0			0	
Speed Limit, mi/h		35	35	35	35					35	35	35

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G <sub>max</sub> ) or Phase Split, s		76.0	40.0	116.0				34.0
Yellow Change Interval (Y), s		3.0	3.0	3.0				3.0
Red Clearance Interval (R <sub>c</sub> ), s		2.0	2.0	2.0				2.0
Minimum Green (G <sub>min</sub> ), s		6	6	6				6
Start-Up Lost Time (lt), s		2.0	2.0	2.0			2.0	2.0
Extension of Effective Green (e), s		2.0	2.0	2.0			2.0	2.0
Passage (PT), s		2.0	2.0	2.0				2.0
Recall Mode		Min	Off	Min				Off
Dual Entry		Yes	No	Yes				Yes
Walk (Walk), s				0.0		0.0		0.0
Pedestrian Clearance Time (PC), s				0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius				0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft				9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0		No	0.0	0	No		0		0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0				12.0	5.0	2.0
Pedestrian Signal / Occupied Parking			0.50	No		0.50	No			No		0.50

## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.96
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & SB I-77 Ramps	File Name	SR 39 PM.xus		
Project Description	PM No Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h		680	310	450	640					420	10	150

Signal Information													
Cycle, s	150.0	Reference Phase	2										
Offset, s	76	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On										
Force Mode	Float	Simult. Gap N/S	On										
		Green		35.0	71.0	29.0	0.0	0.0	0.0				
		Yellow		3.0	3.0	3.0	0.0	0.0	0.0				
		Red		2.0	2.0	2.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6				4
Case Number		8.3	2.0	4.0				10.0
Phase Duration, s		76.0	40.0	116.0				34.0
Change Period, ( Y+R <sub>c</sub> ), s		5.0	5.0	5.0				5.0
Max Allow Headway ( MAH ), s		0.0	3.1	0.0				3.2
Queue Clearance Time ( g <sub>s</sub> ), s			37.0					31.0
Green Extension Time ( g <sub>e</sub> ), s		0.0	0.0	0.0				0.0
Phase Call Probability			1.00					1.00
Max Out Probability			1.00					1.00

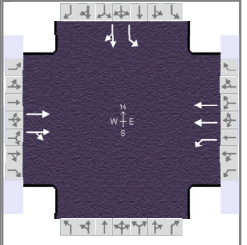
Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement		2	12	1	6					7	4	14	
Adjusted Flow Rate ( v ), veh/h		580	520	479	681					438	167		
Adjusted Saturation Flow Rate ( s ), veh/h/ln		1885	1684	1767	1766					1739	1562		
Queue Service Time ( g <sub>s</sub> ), s		30.9	35.2	35.0	9.3					29.0	14.5		
Cycle Queue Clearance Time ( g <sub>c</sub> ), s		30.9	35.2	35.0	9.3					29.0	14.5		
Green Ratio ( g/C )		0.47	0.47	0.23	0.74					0.19	0.19		
Capacity ( c ), veh/h		892	797	412	2614					336	302		
Volume-to-Capacity Ratio ( X )		0.651	0.652	1.161	0.260					1.301	0.552		
Back of Queue ( Q ), ft/ln ( 95 th percentile)		576.4	522.9	864.1	136.3					1057.2	253.4		
Back of Queue ( Q ), veh/ln ( 95 th percentile)		22.9	20.9	33.8	5.3					40.7	9.7		
Queue Storage Ratio ( RQ ) ( 95 th percentile)		5.76	5.27	2.54	0.18					1.11	1.27		
Uniform Delay ( d <sub>1</sub> ), s/veh		30.1	30.1	57.5	6.3					60.5	54.6		
Incremental Delay ( d <sub>2</sub> ), s/veh		3.3	3.7	85.0	0.1					155.7	1.3		
Initial Queue Delay ( d <sub>3</sub> ), s/veh		0.0	0.0	0.0	0.0					0.0	0.0		
Control Delay ( d ), s/veh		33.3	33.7	142.5	6.4					216.2	55.9		
Level of Service ( LOS )		C	C	F	A					F	E		
Approach Delay, s/veh / LOS		33.5	C	62.6	E		0.0			172.0	F		
Intersection Delay, s/veh / LOS		74.5						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.40	A	1.64	B	2.33	B	2.16	B
Bicycle LOS Score / LOS	1.34	A	1.42	A			1.48	A



## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.96
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & SB I-77 Ramps		File Name	SR 39 PM.xus	
Project Description	PM No Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		680	310	450	640					420	10	150

Signal Information														
Cycle, s	150.0	Reference Phase	2	Green	35.0	71.0	29.0	0.0	0.0	0.0	1	2	3	4
Offset, s	76	Reference Point	End	Yellow	3.0	3.0	3.0	0.0	0.0	0.0	5	6	7	8
Uncoordinated	No	Simult. Gap E/W	On	Red	2.0	2.0	2.0	0.0	0.0	0.0				
Force Mode	Float	Simult. Gap N/S	On											

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	1.000	0.992	1.000	0.977	0.977	1.000				0.961	0.961	1.000
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	0.952	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	1.000	1.000		0.952	0.000					0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		0.893	0.893		1.000	1.000					0.856	0.856
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000						1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000						1.000
Work Zone Adjustment Factor ( $f_{WZ}$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000				1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )				1.00								
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )	1.00											
Movement Saturation Flow Rate (s), veh/h	0	2453	1117	1767	3622	0				1739	98	1465
Proportion of Vehicles Arriving on Green (P)	0.00	0.47	0.47	0.23	0.74	0.00	0.00	0.00	0.00	0.19	0.19	0.19
Incremental Delay Factor (k)		0.50	0.50	0.50	0.50					0.50	0.09	

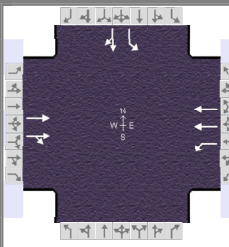
Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )		5.0	5.0	5.0				4.0
Green Ratio ( $g/C$ )		0.47	0.23	0.74				0.19
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln		772	0	0				1739
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln		0						
Permitted Effective Green Time ( $g_p$ ), s		0.0	0.0	0.0				0.0
Permitted Service Time ( $g_u$ ), s		0.0	0.0	0.0				0.0
Permitted Queue Service Time ( $g_{ps}$ ), s								
Time to First Blockage ( $g_t$ ), s		71.0	0.0	0.0				0.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln								
Protected Right Effective Green Time ( $g_R$ ), s								

Multimodal	EB			WB			NB			SB		
Pedestrian $F_w / F_v$	0.681	0.000	0.972	0.000	1.557	0.000	1.389	0.000				
Pedestrian $F_s / F_{delay}$	0.000	0.122	0.000	0.065	0.000	0.173	0.000	0.173				
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00					
Bicycle $c_b / d_b$	946.67	20.80	1480.00	5.07	-66.67	80.08	-80.00	81.12				
Bicycle $F_w / F_v$	-3.64	0.85	-3.64	0.94	-3.64		-3.64	1.00				



# HCS Signalized Intersection Results Graphical Summary

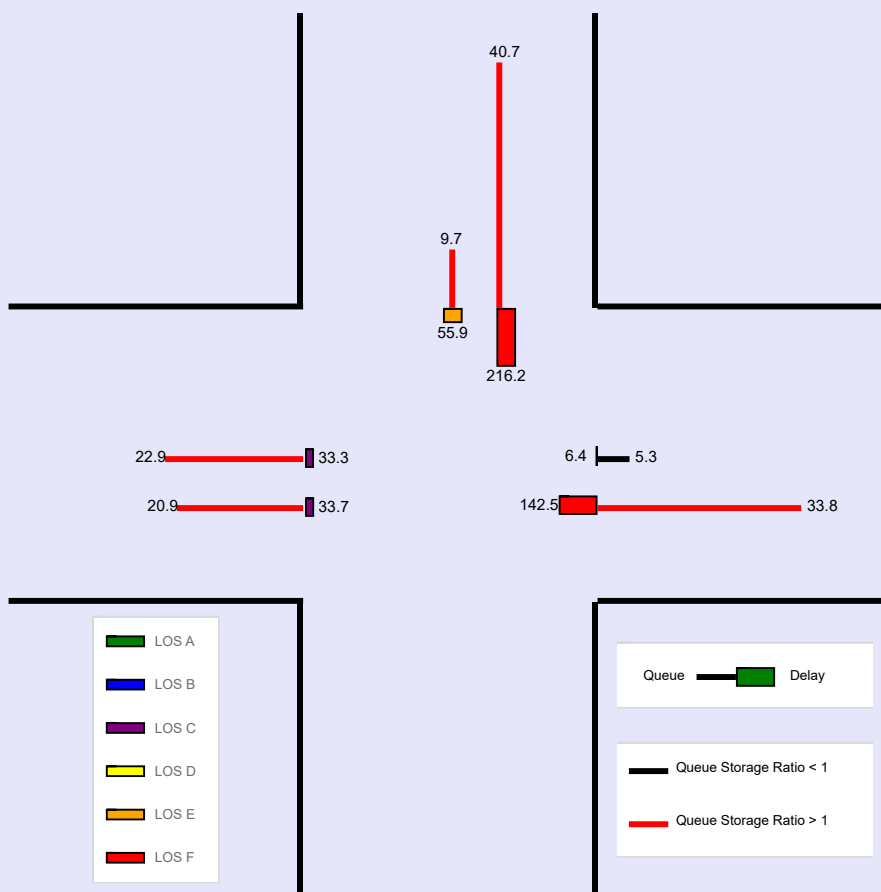
General Information				Intersection Information			
Agency	Burgess & Niple			Duration, h	0.250		
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other		
Jurisdiction		Time Period	PM Peak Hour	PHF	0.96		
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00		
Intersection	SR 39 & SB I-77 Ramps		File Name	SR 39 PM.xus			
Project Description	PM No Build						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h		680	310	450	640					420	10	150

Signal Information												
Cycle, s	150.0	Reference Phase	2									
Offset, s	76	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	35.0	71.0	29.0	0.0	0.0	0.0		
Force Mode	Float	Simult. Gap N/S	On	Yellow	3.0	3.0	3.0	0.0	0.0	0.0		
				Red	2.0	2.0	2.0	0.0	0.0	0.0		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Back of Queue ( Q ), ft/ln ( 95 th percentile)		576.4	522.9	864.1	136.3					1057.2	253.4	
Back of Queue ( Q ), veh/ln ( 95 th percentile)		22.9	20.9	33.8	5.3					40.7	9.7	
Queue Storage Ratio ( RQ ) ( 95 th percentile)		5.76	5.27	2.54	0.18					1.11	1.27	
Control Delay ( d ), s/veh		33.3	33.7	142.5	6.4					216.2	55.9	
Level of Service ( LOS)		C	C	F	A					F	E	
Approach Delay, s/veh / LOS	33.5	C		62.6	E		0.0				172.0	F
Intersection Delay, s/veh / LOS	74.5						E					





**--- Messages ---**

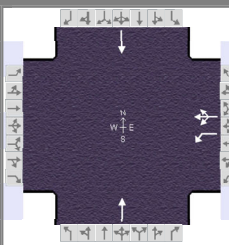
WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

WARNING: If demand exceeds capacity, a multiple-period analysis should be conducted.

**--- Comments ---**

## HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak Hour	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & SB Ramps	File Name	Scenario1_SBRamps_AM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h				330	0	40		240			290	

Signal Information													
Cycle, s	60.0	Reference Phase	2	↓	↑	↔	↔	↔	↔	↓	↑	↔	↔
Offset, s	0	Reference Point	End	Green	28.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

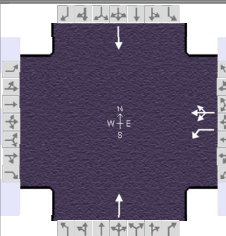
Traffic Information	EB			WB			NB			SB					
	L	T	R	L	T	R	L	T	R	L	T	R			
Approach Movement															
Demand (v), veh/h				330	0	40		240			290				
Initial Queue (Q <sub>b</sub> ), veh/h				0	0	0		0			0				
Base Saturation Flow Rate (s <sub>0</sub> ), veh/h				1900	1900	1900		1900			1900				
Parking (N <sub>m</sub> ), man/h					None				None				None		
Heavy Vehicles (P <sub>HV</sub> ), %				7	0			3			3				
Ped / Bike / RTOR, /h	0	0		0	0	0	0	0		0	0				
Buses (N <sub>b</sub> ), buses/h				0	0	0	0	0	0	0	0	0			
Arrival Type (AT)				3	3	3		3			3				
Upstream Filtering (I)				1.00	1.00	1.00		0.86			1.00				
Lane Width (W), ft				12.0	12.0			12.0			12.0				
Turn Bay Length, ft				600	675			950			2100				
Grade (P <sub>g</sub> ), %		0			0			0			0				
Speed Limit, mi/h				35	35	35		45			45				

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G <sub>max</sub> ) or Phase Split, s				26.0		34.0		34.0
Yellow Change Interval (Y), s				4.0		4.0		4.0
Red Clearance Interval (R <sub>c</sub> ), s				2.0		2.0		2.0
Minimum Green (G <sub>min</sub> ), s				20		20		20
Start-Up Lost Time (l <sub>t</sub> ), s			2.0	2.0		2.0		2.0
Extension of Effective Green (e), s			2.0	2.0		2.0		2.0
Passage (PT), s				2.0		2.0		2.0
Recall Mode				Off		Min		Min
Dual Entry				Yes		Yes		Yes
Walk (Walk), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (PC), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0			
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0			
Street Width / Island / Curb, ft		0		0.0	0	No	0.0	0	No	0.0		No
Width Outside / Bike Lane / Shoulder, ft				12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No			No	0.50		No	0.50				0.50

## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak Hour	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & SB Ramps	File Name	Scenario1_SBRamps_AM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h				330	0	40		240			290	

Signal Information													
Cycle, s	60.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	28.0	20.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	2.0	2.0	0.0	0.0	0.0	0.0			

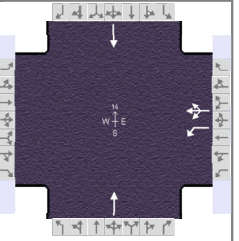
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				4		6		2
Case Number				10.0		8.0		8.0
Phase Duration, s				26.0		34.0		34.0
Change Period, ( Y+R <sub>c</sub> ), s				6.0		6.0		6.0
Max Allow Headway ( MAH ), s				3.2		0.0		0.0
Queue Clearance Time ( g <sub>s</sub> ), s				10.0				
Green Extension Time ( g <sub>e</sub> ), s				0.6		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				0.01				

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				7	4	14		6			2	
Adjusted Flow Rate ( v ), veh/h				284	114			258			312	
Adjusted Saturation Flow Rate ( s ), veh/h/ln				1711	1673			1856			1856	
Queue Service Time ( g <sub>s</sub> ), s				8.0	3.7			1.1			6.5	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s				8.0	3.7			1.1			6.5	
Green Ratio ( g/C )				0.33	0.33			0.47			0.47	
Capacity ( c ), veh/h				569	557			867			867	
Volume-to-Capacity Ratio ( X )				0.498	0.205			0.298			0.360	
Back of Queue ( Q ), ft/ln ( 95 th percentile)				131.5	59.6			20			104.7	
Back of Queue ( Q ), veh/ln ( 95 th percentile)				5.0	2.4			0.8			4.1	
Queue Storage Ratio ( RQ ) ( 95 th percentile)				0.22	0.09			0.02			0.05	
Uniform Delay ( d <sub>1</sub> ), s/veh				16.0	19.1			1.6			10.2	
Incremental Delay ( d <sub>2</sub> ), s/veh				0.3	0.1			0.8			1.2	
Initial Queue Delay ( d <sub>3</sub> ), s/veh				0.0	0.0			0.0			0.0	
Control Delay ( d ), s/veh				16.3	19.2			2.3			11.4	
Level of Service ( LOS )				B	B			A			B	
Approach Delay, s/veh / LOS	0.0			17.1		B		2.3	A		11.4	B
Intersection Delay, s/veh / LOS				11.3				B				

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.71	B	1.71	B	1.66	B	1.37	A
Bicycle LOS Score / LOS			1.14	A	0.91	A	1.00	A

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak Hour	PHF	0.93
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & SB Ramps	File Name	Scenario1_SBRamps_AM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				330	0	40			240			290

Signal Information														
Cycle, s	60.0	Reference Phase	2	↓	↑	↔					↓	↑	↔	
Offset, s	0	Reference Point	End	Green	28.0	20.0	0.0	0.0	0.0	0.0	1	2	3	4
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )				0.945	1.000	0.945	1.000	0.977	1.000	1.000	0.977	1.000
Parking Activity Adjustment Factor ( $f_p$ )	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )				0.952	0.000		1.000	1.000		1.000	1.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )					0.847	0.847		0.000	1.000		0.000	1.000
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )				1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )						1.000			1.000			1.000
Work Zone Adjustment Factor ( $f_{WZ}$ )				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )												
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )							1.00			1.00		
Movement Saturation Flow Rate (s), veh/h				1711	0	1673	0	1856	0	0	1856	0
Proportion of Vehicles Arriving on Green (P)	0.00	0.00	0.00	0.33	0.00	0.33	0.00	0.90	0.00	0.00	0.47	0.00
Incremental Delay Factor (k)				0.04	0.04			0.50			0.50	

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )				4.0		6.0		6.0
Green Ratio ( $g/C$ )				0.33		0.47		0.47
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln				1711		1085		1139
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln						0		0
Permitted Effective Green Time ( $g_p$ ), s				0.0		0.0		0.0
Permitted Service Time ( $g_u$ ), s				0.0		0.0		0.0
Permitted Queue Service Time ( $g_{ps}$ ), s								
Time to First Blockage ( $g_t$ ), s				0.0		28.0		28.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln								
Protected Right Effective Green Time ( $g_R$ ), s								

Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	0.972	0.000	0.972	0.000	0.972	0.000	0.681	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.136	0.000	0.136	0.000	0.086	0.000	0.086
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$		35.21	-233.33	37.41	934.21	8.52	934.21	8.52
Bicycle $F_w / F_v$	-3.64		-3.64	0.66	-3.64	0.43	-3.64	0.51





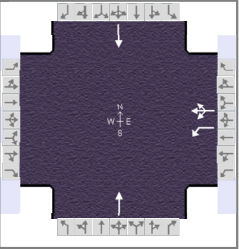
# HCS Signalized Intersection Results Graphical Summary

## General Information

Agency	Burgess & Niple		
Analyst	KB	Analysis Date	Jan 16, 2024
Jurisdiction		Time Period	AM Peak Hour
Urban Street	SR 39	Analysis Year	2050
Intersection	SR 39 & SB Ramps	File Name	Scenario1_SBRamps_AM.xus
Project Description	Build Alternative 1		

## Intersection Information

Duration, h	0.250
Area Type	Other
PHF	0.93
Analysis Period	1 > 7:00



## Demand Information

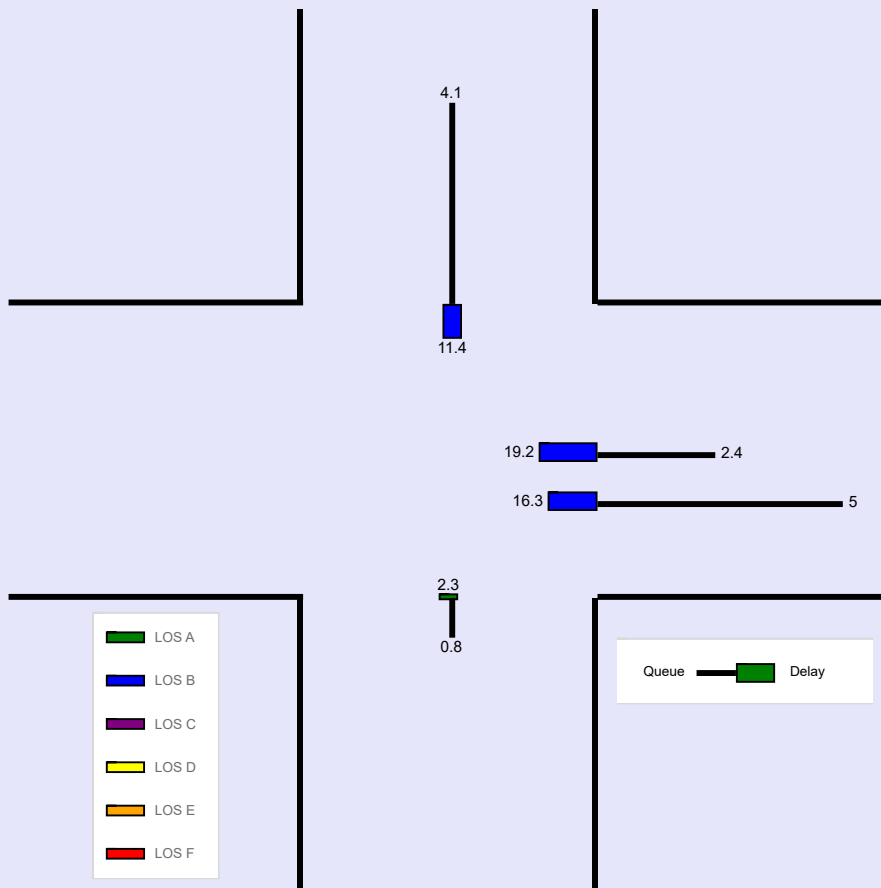
Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				330	0	40		240			290	

## Signal Information

Cycle, s	60.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	28.0	20.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0		
				Red	2.0	2.0	0.0	0.0	0.0	0.0		

## Movement Group Results

Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue (Q), ft/ln (95 th percentile)				131.5	59.6			20			104.7	
Back of Queue (Q), veh/ln (95 th percentile)				5.0	2.4			0.8			4.1	
Queue Storage Ratio (RQ) (95 th percentile)				0.22	0.09			0.02			0.05	
Control Delay (d), s/veh				16.3	19.2			2.3			11.4	
Level of Service (LOS)				B	B			A			B	
Approach Delay, s/veh / LOS	0.0			17.1		B	2.3		A	11.4		B
Intersection Delay, s/veh / LOS				11.3						B		





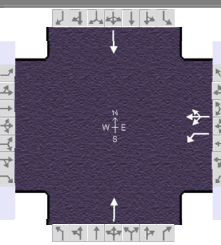
**--- Messages ---**

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

**--- Comments ---**

## HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & SB Ramps	File Name	Scenario1_SBRamps_PM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h				530	0	50			330			520

Signal Information													
Cycle, s	100.0	Reference Phase	2	↓	↑	↔					↓		↔
Offset, s	0	Reference Point	End	Green	65.0	23.0	0.0	0.0	0.0	0.0			
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	0.0	0.0	0.0	0.0			

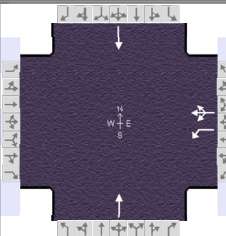
Traffic Information	EB			WB			NB			SB					
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R			
Demand ( v ), veh/h				530	0	50			330			520			
Initial Queue ( Q <sub>b</sub> ), veh/h				0	0	0			0			0			
Base Saturation Flow Rate ( s <sub>0</sub> ), veh/h				1900	1900	1900			1900			1900			
Parking ( N <sub>m</sub> ), man/h					None				None				None		
Heavy Vehicles ( P <sub>HV</sub> ), %				5	5				2			2			
Ped / Bike / RTOR, /h	0	0		0	0	0	0	0		0	0				
Buses ( N <sub>b</sub> ), buses/h				0	0	0	0	0	0	0	0	0			
Arrival Type ( AT )				3	3	3			3			3			
Upstream Filtering ( I )				1.00	1.00	1.00			0.74			1.00			
Lane Width ( W ), ft				12.0	12.0				12.0			12.0			
Turn Bay Length, ft				600	675				950			2100			
Grade ( P <sub>g</sub> ), %		0			0				0			0			
Speed Limit, mi/h				35	35	35			45			45			

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( G <sub>max</sub> ) or Phase Split, s				73.0		27.0		27.0
Yellow Change Interval ( Y ), s				4.0		4.0		4.0
Red Clearance Interval ( R <sub>c</sub> ), s				2.0		2.0		2.0
Minimum Green ( G <sub>min</sub> ), s				20		20		20
Start-Up Lost Time ( l <sub>t</sub> ), s			2.0	2.0		2.0		2.0
Extension of Effective Green ( e ), s			2.0	2.0		2.0		2.0
Passage ( PT ), s				2.0		2.0		2.0
Recall Mode				Off		Min		Min
Dual Entry				Yes		Yes		Yes
Walk ( Walk ), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time ( PC ), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0			
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0			
Street Width / Island / Curb, ft		0		0.0	0	No	0.0	0	No	0.0		No
Width Outside / Bike Lane / Shoulder, ft				12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No			No	0.50		No	0.50				0.50

## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & SB Ramps	File Name	Scenario1_SBRamps_PM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h				530	0	50		330			520	

Signal Information														
Cycle, s	100.0	Reference Phase	2	↓	↑	↔					↓	↑	↔	
Offset, s	0	Reference Point	End	Green	65.0	23.0	0.0	0.0	0.0	0.0	1	2	3	4
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8

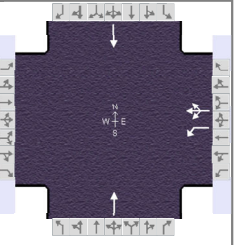
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				4		6		2
Case Number				10.0		8.0		8.0
Phase Duration, s				29.0		71.0		71.0
Change Period, ( $Y+R_c$ ), s				6.0		6.0		6.0
Max Allow Headway ( $MAH$ ), s				3.2		0.0		0.0
Queue Clearance Time ( $g_s$ ), s				21.6				
Green Extension Time ( $g_e$ ), s				1.4		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				0.00				

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				7	4	14		6			2	
Adjusted Flow Rate ( $v$ ), veh/h				353	291			367			578	
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln				1739	1702			1870			1870	
Queue Service Time ( $g_s$ ), s				19.6	16.9			11.6			15.6	
Cycle Queue Clearance Time ( $g_c$ ), s				19.6	16.9			11.6			15.6	
Green Ratio ( $g/C$ )				0.23	0.23			0.65			0.65	
Capacity ( $c$ ), veh/h				400	392			1216			1216	
Volume-to-Capacity Ratio ( $X$ )				0.883	0.743			0.302			0.475	
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)				341.5	326.2			196.1			241.4	
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)				13.1	12.5			7.7			9.5	
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)				0.57	0.48			0.21			0.11	
Uniform Delay ( $d_1$ ), s/veh				37.2	44.9			11.7			8.9	
Incremental Delay ( $d_2$ ), s/veh				2.6	1.1			0.5			1.3	
Initial Queue Delay ( $d_3$ ), s/veh				0.0	0.0			0.0			0.0	
Control Delay ( $d$ ), s/veh				39.8	45.9			12.2			10.2	
Level of Service (LOS)				D	D			B			B	
Approach Delay, s/veh / LOS	0.0			42.6		D	12.2		B	10.2		B
Intersection Delay, s/veh / LOS				23.8						C		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.73	B	1.73	B	1.64	B	1.35	A
Bicycle LOS Score / LOS			1.55	B	1.09	A	1.44	A

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & SB Ramps	File Name	Scenario1_SBRamps_PM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				530	0	50			330			520

Signal Information														
Cycle, s	100.0	Reference Phase	2	↓	↑	↔					↓	↑	↔	
Offset, s	0	Reference Point	End	Green	65.0	23.0	0.0	0.0	0.0	0.0	1	2	3	4
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )				0.961	0.961	0.961	1.000	0.984	1.000	1.000	0.984	1.000
Parking Activity Adjustment Factor ( $f_p$ )	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )				0.952	0.000		1.000	1.000		1.000	1.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )					0.847	0.847		0.000	1.000		0.000	1.000
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )				1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )						1.000			1.000			1.000
Work Zone Adjustment Factor ( $f_{WZ}$ )				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )												
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )							1.00			1.00		
Movement Saturation Flow Rate (s), veh/h				1739	0	1702	0	1870	0	0	1870	0
Proportion of Vehicles Arriving on Green (P)	0.00	0.00	0.00	0.23	0.00	0.23	0.00	0.50	0.00	0.00	0.65	0.00
Incremental Delay Factor (k)				0.04	0.04			0.50			0.50	

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )				4.0		6.0		6.0
Green Ratio ( $g/C$ )				0.23		0.65		0.65
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln				1739		849		1031
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln						0		0
Permitted Effective Green Time ( $g_p$ ), s				0.0		0.0		0.0
Permitted Service Time ( $g_u$ ), s				0.0		0.0		0.0
Permitted Queue Service Time ( $g_{ps}$ ), s								
Time to First Blockage ( $g_t$ ), s				0.0		65.0		65.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln								
Protected Right Effective Green Time ( $g_R$ ), s								

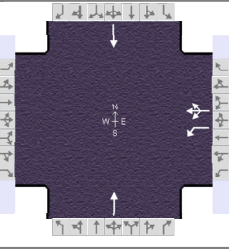
Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	0.972	0.000	0.972	0.000	0.972	0.000	0.681	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.157	0.000	0.157	0.000	0.073	0.000	0.073
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$		55.13		57.25	1299.79	6.13	1299.79	6.13
Bicycle $F_w / F_v$	-3.64		-3.64	1.06	-3.64	0.61	-3.64	0.95





# HCS Signalized Intersection Results Graphical Summary

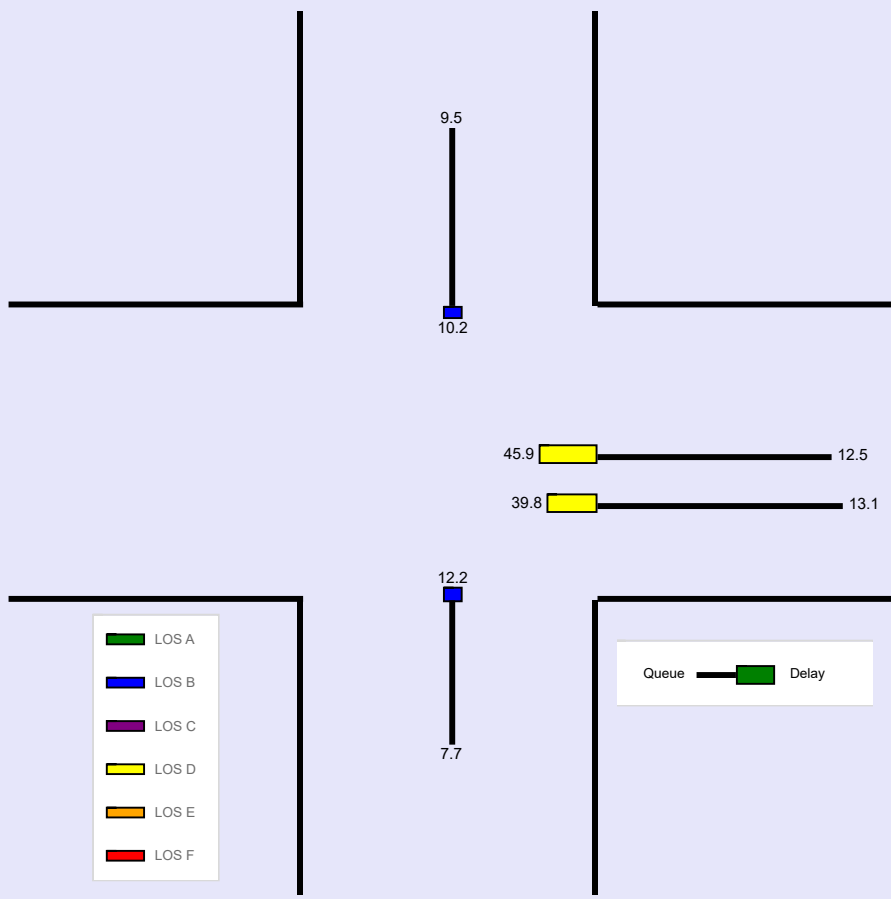
General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.90
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & SB Ramps	File Name	Scenario1_SBRamps_PM.xus		
Project Description	Build Alternative 1				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h				530	0	50			330			

Signal Information											
Cycle, s	100.0	Reference Phase	2	↓	↑	↔	↔	1	2	3	4
Offset, s	0	Reference Point	End	Green	65.0	23.0	0.0	0.0	0.0	0.0	
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	0.0	0.0	0.0	0.0	

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Back of Queue ( Q ), ft/ln ( 95 th percentile)				341.5	326.2			196.1			241.4	
Back of Queue ( Q ), veh/ln ( 95 th percentile)				13.1	12.5			7.7			9.5	
Queue Storage Ratio ( RQ ) ( 95 th percentile)				0.57	0.48			0.21			0.11	
Control Delay ( d ), s/veh				39.8	45.9			12.2			10.2	
Level of Service (LOS)				D	D			B			B	
Approach Delay, s/veh / LOS	0.0			42.6	D		12.2	B		10.2	B	
Intersection Delay, s/veh / LOS	23.8						C					



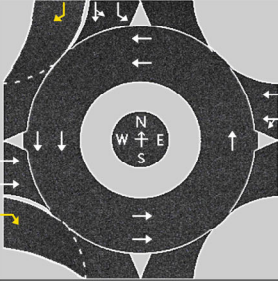


**--- Messages ---**

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

**--- Comments ---**

# HCS Roundabouts Report

General Information				Site Information				
Analyst	Sonja Summer				Intersection	SR 39 & SB Ramps		
Agency or Co.	B&N				E/W Street Name	SR 39		
Date Performed	11/28/2023				N/S Street Name	SB Ramps		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	AM Peak Hour				Peak Hour Factor	0.93		
Project Description	Build Alternative 2				Jurisdiction			

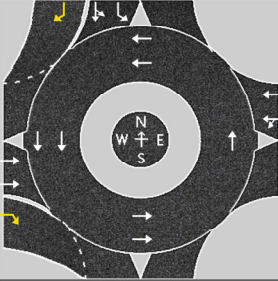
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	2	0	0	0	2	0	0	0	0	0	0	1	1	0
Lane Assignment	T		T		LT		T						L		LT	
Volume (V), veh/h	0		380	140	0	250	500						0	260	10	110
Percent Heavy Vehicles, %	8		8	8	9	9	9						7	7	7	7
Flow Rate (v <sub>PCE</sub> ), pc/h	0		441	163	0	293	586						0	299	12	127
Right-Turn Bypass	Yielding				None				None				Yielding			
Conflicting Lanes	2				1								2			
Pedestrians Crossing, p/h	0				0								0			
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment												
Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.6453	4.3276	4.9763	4.5436	4.5436					4.6453	4.3276	4.9763
Follow-Up Headway, s	2.6667	2.5352	2.6087	2.5352	2.5352					2.6667	2.5352	2.6087

Flow Computations, Capacity and v/c Ratios												
Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	207	234	163	413	466					165	146	127
Entry Volume, veh/h	192	216	151	379	427					154	137	119
Circulating Flow (v <sub>c</sub> ), pc/h	604			0			740			879		
Exiting Flow (v <sub>e</sub> ), pc/h	740			586			0			305		
Capacity (c <sub>PCE</sub> ), pc/h	774	850	1011	1420	1420					601	673	759
Capacity (c), veh/h	717	787	936	1303	1303					562	629	709
v/c Ratio (x)	0.27	0.28	0.16	0.29	0.33					0.27	0.22	0.17

Delay and Level of Service												
Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	8.2	7.7	5.4	5.3	5.7					10.2	8.4	6.9
Lane LOS	A	A	A	A	A					B	A	A
95% Queue, veh	1.1	1.1	0.6	1.2	1.4					1.1	0.8	0.6
Approach Delay, s/veh   LOS	7.2		A	5.6		A				8.6		A
Intersection Delay, s/veh   LOS	6.8						A					

# HCS Roundabouts Report

General Information				Site Information				
Analyst	Sonja Summer				Intersection	SR 39 & SB Ramps		
Agency or Co.	B&N				E/W Street Name	SR 39		
Date Performed	11/28/2023				N/S Street Name	SB Ramps		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	PM Peak Hour				Peak Hour Factor	0.90		
Project Description	Build Alternative 2				Jurisdiction			

## Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	2	0	0	0	2	0	0	0	0	0	0	1	1	0
Lane Assignment	T		T		LT		T						L		LT	
Volume (V), veh/h	0		680	310	0	450	640						0	420	10	150
Percent Heavy Vehicles, %	1		1	1	3	3	3						5	5	5	5
Flow Rate (V <sub>PCE</sub> ), pc/h	0		763	348	0	515	732						0	490	12	175
Right-Turn Bypass	Yielding				None				None				Yielding			
Conflicting Lanes	2				1								2			
Pedestrians Crossing, p/h	0				0								0			
Proportion of CAVs	0															

## Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.6453	4.3276	4.9763	4.5436	4.5436					4.6453	4.3276	4.9763
Follow-Up Headway, s	2.6667	2.5352	2.6087	2.5352	2.5352					2.6667	2.5352	2.6087

## Flow Computations, Capacity and v/c Ratios

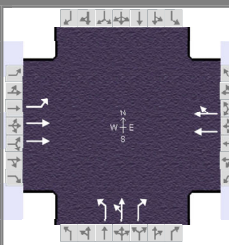
Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	359	404	348	586	661					236	266	175
Entry Volume, veh/h	355	400	345	569	642					225	253	167
Circulating Flow (v <sub>c</sub> ), pc/h	1017			0			1253			1247		
Exiting Flow (v <sub>ex</sub> ), pc/h	1253			732			0			527		
Capacity (C <sub>PCE</sub> ), pc/h	530	598	806	1420	1420					429	492	654
Capacity (c), veh/h	524	592	798	1379	1379					408	469	623
v/c Ratio (x)	0.68	0.68	0.43	0.41	0.47					0.55	0.54	0.27

## Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	23.4	21.2	10.0	6.5	7.2					21.8	19.1	9.2
Lane LOS	C	C	B	A	A					C	C	A
95% Queue, veh	5.1	5.2	2.2	2.1	2.5					3.2	3.2	1.1
Approach Delay, s/veh   LOS	18.4		C	6.9		A				17.5		C
Intersection Delay, s/veh   LOS	13.5						B					

## HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.98
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & NB I-77 Ramps		File Name	SR 39 AM.xus	
Project Description	AM No Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	80	560			510	260	240	10	280			

Signal Information				Phase Diagram										
Cycle, s	57.7	Reference Phase	2	↔	↔	↔	↕	↕	↕	↕	↕	↕	↕	
Offset, s	11	Reference Point	End	Green	5.2	21.0	13.5	0.0	0.0	0.0	1	2	3	4
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0				

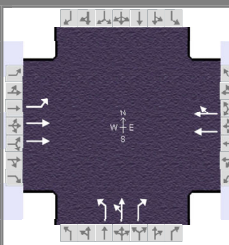
Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	80	560			510	260	240	10	280			
Initial Queue ( Q <sub>b</sub> ), veh/h	0	0			0	0	0	0	0			
Base Saturation Flow Rate ( s <sub>0</sub> ), veh/h	1900	1900			1900	1900	1900	1900	1900			
Parking ( N <sub>m</sub> ), man/h		None			None			None				
Heavy Vehicles ( P <sub>HV</sub> ), %	5	5			7		9	9	9			
Ped / Bike / RTOR, /h	0	0		0	0	0	0	0	0	0	0	
Buses ( N <sub>b</sub> ), buses/h	0	0	0	0	0	0	0	0	0			
Arrival Type ( AT )	3	3			3	3	3	3	3			
Upstream Filtering ( I )	0.80	0.80			1.00	1.00	1.00	1.00	1.00			
Lane Width ( W ), ft	12.0	12.0			12.0		12.0	12.0	12.0			
Turn Bay Length, ft	300	750			1200		750	750	825			
Grade ( P <sub>g</sub> ), %		0			0			0			0	
Speed Limit, mi/h	35	35			35	35	35	35	35			

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( G <sub>max</sub> ) or Phase Split, s	8.0	38.0		30.0		30.0		
Yellow Change Interval ( Y ), s	4.0	4.0		4.0		4.0		
Red Clearance Interval ( R <sub>c</sub> ), s	2.0	2.0		2.0		2.0		
Minimum Green ( G <sub>min</sub> ), s	7	20		20		10		
Start-Up Lost Time ( l <sub>t</sub> ), s	2.0	2.0		2.0	2.0	2.0		
Extension of Effective Green ( e ), s	2.0	2.0		2.0	2.0	2.0		
Passage ( PT ), s	2.0	2.0		2.0		2.0		
Recall Mode	Off	Off		Off		Off		
Dual Entry	No	Yes		Yes		Yes		
Walk ( Walk ), s		0.0				0.0		0.0
Pedestrian Clearance Time ( PC ), s		0.0				0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0				0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0				9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0		No	0.0	0	No		0	
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0			
Pedestrian Signal / Occupied Parking	No		0.50			0.50	No		0.50	No		

## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.98
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & NB I-77 Ramps	File Name	SR 39 AM.xus		
Project Description	AM No Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	80	560			510	260	240	10	280			

Signal Information				Phase Diagram										
Cycle, s	57.7	Reference Phase	2	↔	↔↔	↔↔	↕↕	↕	↔↔	↔↔	↔↔	↔↔		
Offset, s	11	Reference Point	End	Green	5.2	21.0	13.5	0.0	0.0	0.0	1	2	3	4
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	↗	↖		
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0	↘	↙	↕	↕

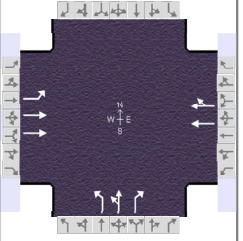
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6		8		
Case Number	1.0	4.0		8.3		9.0		
Phase Duration, s	11.2	38.2		27.0		19.5		
Change Period, ( $Y+R_c$ ), s	6.0	6.0		6.0		6.0		
Max Allow Headway ( $MAH$ ), s	3.1	3.1		3.1		3.2		
Queue Clearance Time ( $g_s$ ), s	3.5	7.3		18.2		12.4		
Green Extension Time ( $g_e$ ), s	0.0	3.2		2.8		1.1		
Phase Call Probability	0.75	1.00		1.00		1.00		
Max Out Probability	0.15	0.00		0.11		0.00		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate ( $v$ ), veh/h	86	602			416	370	147	108	286			
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln	1739	1738			1796	1591	1682	1690	1497			
Queue Service Time ( $g_s$ ), s	1.5	5.3			16.2	11.1	4.2	3.0	10.4			
Cycle Queue Clearance Time ( $g_c$ ), s	1.5	5.3			16.2	11.1	4.2	3.0	10.4			
Green Ratio ( $g/C$ )	0.49	0.56			0.36	0.36	0.23	0.23	0.23			
Capacity ( $c$ ), veh/h	338	1942			653	579	393	395	350			
Volume-to-Capacity Ratio ( $X$ )	0.254	0.310			0.636	0.639	0.374	0.274	0.817			
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)	21.8	67.7			186.1	157.1	72.4	51.9	165			
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)	0.8	2.6			7.1	6.3	2.7	1.9	6.2			
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)	0.07	0.09			0.16	0.14	0.10	0.07	0.20			
Uniform Delay ( $d_1$ ), s/veh	11.2	6.8			15.2	15.2	18.6	18.1	21.0			
Incremental Delay ( $d_2$ ), s/veh	0.1	0.0			0.4	0.4	0.2	0.1	1.8			
Initial Queue Delay ( $d_3$ ), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Control Delay ( $d$ ), s/veh	11.3	6.8			15.6	15.7	18.8	18.2	22.8			
Level of Service (LOS)	B	A			B	B	B	B	C			
Approach Delay, s/veh / LOS	7.4	A		15.6	B		20.8	C		0.0		
Intersection Delay, s/veh / LOS	14.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.87	B	1.38	A	2.12	B	2.29	B
Bicycle LOS Score / LOS	1.03	A	1.14	A	1.38	A		

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.98
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & NB I-77 Ramps	File Name	SR 39 AM.xus		
Project Description	AM No Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	80	560			510	260	240	10	280			

Signal Information														
Cycle, s	57.7	Reference Phase	2	↔	↔↔	↔↔	↕↕	↕↕	↕↕	↕↕	↕↕	↕↕	↕↕	
Offset, s	11	Reference Point	End	Green	5.2	21.0	13.5	0.0	0.0	0.0	1	2	3	4
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	↗	↖	↗	↖
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0	↘	↙	↘	↙

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.961	0.961	1.000	1.000	0.945	1.000	0.930	0.930	0.930			
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	0.952	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		1.000	1.000		0.952	0.000				
Right-Turn Adjustment Factor ( $f_{RT}$ )		1.000	1.000		0.886	0.886		0.000	0.847			
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000			1.000					
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000			1.000			
Work Zone Adjustment Factor ( $f_{wz}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00											
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )				1.00								
Movement Saturation Flow Rate (s), veh/h	1739	3564	0	0	2246	1141	1682	1690	1497			
Proportion of Vehicles Arriving on Green (P)	0.09	0.56	0.00	0.00	0.36	0.36	0.23	0.23	0.23	0.00	0.00	0.00
Incremental Delay Factor (k)	0.04	0.04			0.04	0.04	0.04	0.04	0.04			

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0		6.0		4.0		
Green Ratio (g/C)	0.49	0.56		0.36		0.23		
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	672	0		830		1682		
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln				0				
Permitted Effective Green Time ( $g_p$ ), s	23.0	0.0		0.0		0.0		
Permitted Service Time ( $g_u$ ), s	4.8	0.0		0.0		0.0		
Permitted Queue Service Time ( $g_{ps}$ ), s	2.7							
Time to First Blockage ( $g_t$ ), s	0.0	0.0		21.0		0.0		
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln						0		
Protected Right Effective Green Time ( $g_R$ ), s						0.0		

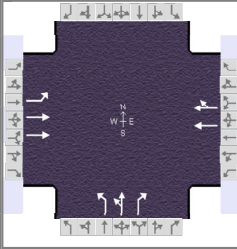
Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	1.198	0.000	0.681	0.000	1.389	0.000	1.557	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.069	0.000	0.099	0.000	0.135	0.000	0.135
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$	1116.97	5.63	727.61	11.68	-242.50	36.29		34.08
Bicycle $F_w / F_v$	-3.64	0.54	-3.64	0.65	-3.64	0.89	-3.64	





# HCS Signalized Intersection Results Graphical Summary

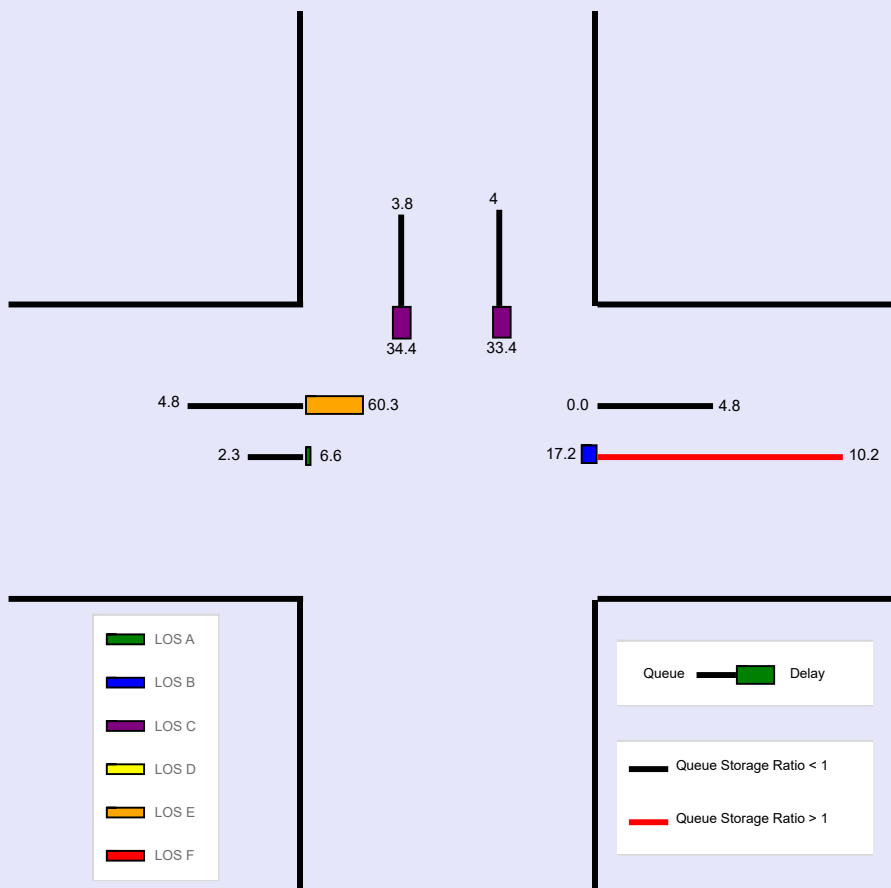
General Information				Intersection Information			
Agency	Burgess & Niple			Duration, h	0.250		
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other		
Jurisdiction		Time Period	AM Peak	PHF	0.98		
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00		
Intersection	SR 39 & NB I-77 Ramps		File Name	SR 39 AM.xus			
Project Description	AM No Build						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	80	560			510	260	240	10	280			

Signal Information				Phase Diagram										
Cycle, s	57.7	Reference Phase	2											
Offset, s	11	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On											
Force Mode	Fixed	Simult. Gap N/S	On											
		Green	5.2	21.0	13.5	0.0	0.0	0.0						
		Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
		Red	2.0	2.0	2.0	0.0	0.0	0.0						

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Back of Queue ( Q ), ft/ln ( 95 th percentile)	21.8	67.7			186.1	157.1	72.4	51.9	165			
Back of Queue ( Q ), veh/ln ( 95 th percentile)	0.8	2.6			7.1	6.3	2.7	1.9	6.2			
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.07	0.09			0.16	0.14	0.10	0.07	0.20			
Control Delay ( d ), s/veh	11.3	6.8			15.6	15.7	18.8	18.2	22.8			
Level of Service ( LOS)	B	A			B	B	B	B	C			
Approach Delay, s/veh / LOS	7.4		A	15.6		B	20.8		C	0.0		
Intersection Delay, s/veh / LOS	14.2						B					





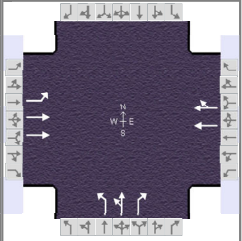
**--- Messages ---**

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

**--- Comments ---**

## HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.94
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & NB I-77 Ramps		File Name	SR 39 PM.xus	
Project Description	PM No Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	140	960			820	410	270	0	370			

Signal Information				Signal Phases											
Cycle, s	91.3	Reference Phase	2	→	→	→	↑	↑	↑	↓	↓	↓	↖	↖	↖
Offset, s	6	Reference Point	End	Green	6.8	36.5	30.0	0.0	0.0	0.0	1	2	3	4	
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8	
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0					

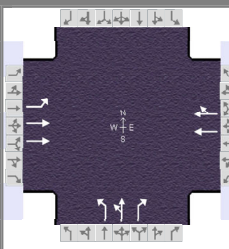
Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	140	960			820	410	270	0	370			
Initial Queue ( Q <sub>b</sub> ), veh/h	0	0			0	0	0	0	0			
Base Saturation Flow Rate ( s <sub>0</sub> ), veh/h	1900	1900			1900	1900	1900	1900	1900			
Parking ( N <sub>m</sub> ), man/h		None			None			None				
Heavy Vehicles ( P <sub>HV</sub> ), %	2	2			2		5	5	5			
Ped / Bike / RTOR, /h	0	0		0	0	0	0	0	0	0	0	
Buses ( N <sub>b</sub> ), buses/h	0	0	0	0	0	0	0	0	0			
Arrival Type ( AT )	3	3			3	3	3	3	3			
Upstream Filtering ( I )	0.34	0.34			1.00	1.00	1.00	1.00	1.00			
Lane Width ( W ), ft	12.0	12.0			12.0		12.0	12.0	12.0			
Turn Bay Length, ft	300	750			1200		750	750	825			
Grade ( P <sub>g</sub> ), %		0			0			0			0	
Speed Limit, mi/h	35	35			35	35	35	35	35			

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( G <sub>max</sub> ) or Phase Split, s	8.0	40.0		40.0		30.0		
Yellow Change Interval ( Y ), s	4.0	4.0		4.0		4.0		
Red Clearance Interval ( R <sub>c</sub> ), s	2.0	2.0		2.0		2.0		
Minimum Green ( G <sub>min</sub> ), s	7	20		20		10		
Start-Up Lost Time ( l <sub>t</sub> ), s	2.0	2.0		2.0	2.0	2.0		
Extension of Effective Green ( e ), s	2.0	2.0		2.0	2.0	2.0		
Passage ( P <sub>T</sub> ), s	2.0	2.0		2.0		2.0		
Recall Mode	Off	Ped		Min		Off		
Dual Entry	No	Yes		Yes		Yes		
Walk ( Walk ), s		0.0				0.0		0.0
Pedestrian Clearance Time ( P <sub>C</sub> ), s		0.0				0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0				0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0				9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0		No	0.0	0	No		0	
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0			
Pedestrian Signal / Occupied Parking	No		0.50			0.50	No		0.50	No		

## HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Burgess & Niple			Duration, h	0.250		
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other		
Jurisdiction		Time Period	PM Peak Hour	PHF	0.94		
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00		
Intersection	SR 39 & NB I-77 Ramps		File Name	SR 39 PM.xus			
Project Description	PM No Build						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	140	960			820	410	270	0	370			

Signal Information				Phase Diagram										
Cycle, s	91.3	Reference Phase	2	↔	↔↔	↔↔	↕	↕	↕	↕	↔	↔	↔	
Offset, s	6	Reference Point	End	Green	6.8	36.5	30.0	0.0	0.0	0.0	1	2	3	4
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0				

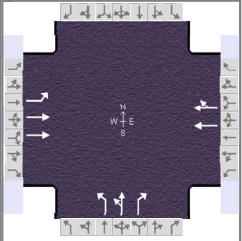
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6		8		
Case Number	1.0	4.0		8.3		9.0		
Phase Duration, s	12.8	55.3		42.5		36.0		
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0		6.0		6.0		
Max Allow Headway ( MAH ), s	3.1	3.1		3.1		3.3		
Queue Clearance Time ( g <sub>s</sub> ), s	5.9	17.3		34.6		30.8		
Green Extension Time ( g <sub>e</sub> ), s	0.0	6.3		1.8		0.0		
Phase Call Probability	0.97	1.00		1.00		1.00		
Max Out Probability	1.00	0.11		0.77		1.00		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16	3	8	18			
Adjusted Flow Rate ( v ), veh/h	139	953			689	620	172	0	509			
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1781	1781			1870	1660	1739	1826	1591			
Queue Service Time ( g <sub>s</sub> ), s	3.9	15.3			31.4	32.6	6.7	0.0	28.8			
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	3.9	15.3			31.4	32.6	6.7	0.0	28.8			
Green Ratio ( g/C )	0.50	0.54			0.40	0.40	0.33	0.33	0.33			
Capacity ( c ), veh/h	229	1922			748	663	572	600	523			
Volume-to-Capacity Ratio ( X )	0.606	0.496			0.922	0.934	0.302	0.000	0.973			
Back of Queue ( Q ), ft/ln ( 95 th percentile)	67.5	198.7			577.9	539.8	125.4	0	557.3			
Back of Queue ( Q ), veh/ln ( 95 th percentile)	2.7	7.8			22.8	21.6	4.8	0.0	21.4			
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.22	0.26			0.48	0.46	0.17	0.00	0.68			
Uniform Delay ( d <sub>1</sub> ), s/veh	20.4	13.2			26.0	26.2	22.8	0.0	30.2			
Incremental Delay ( d <sub>2</sub> ), s/veh	0.7	0.0			14.2	17.5	0.1	0.0	32.2			
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Control Delay ( d ), s/veh	21.1	13.2			40.3	43.8	22.9	0.0	62.4			
Level of Service ( LOS )	C	B			D	D	C		E			
Approach Delay, s/veh / LOS	14.2	B		41.9	D		52.4	D	0.0			
Intersection Delay, s/veh / LOS	34.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.39	A	2.14	B	2.31	B
Bicycle LOS Score / LOS	1.45	A	1.57	B	1.61	B		

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	10/12/2023	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.94
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & NB I-77 Ramps	File Name	SR 39 PM.xus		
Project Description	PM No Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	140	960			820	410	270	0	370			

Signal Information														
Cycle, s	91.3	Reference Phase	2	↔	↔↔	↔↔	↕	↕	↕	↕	↕	↕	↕	
Offset, s	6	Reference Point	End	Green	6.8	36.5	30.0	0.0	0.0	0.0	1	2	3	4
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0	↖	↗	↖	↗

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.984	0.984	1.000	1.000	0.984	1.000	0.961	0.961	0.961			
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	0.952	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		1.000	1.000		0.952	0.000				
Right-Turn Adjustment Factor ( $f_{RT}$ )		1.000	1.000		0.888	0.888		0.000	0.847			
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000			1.000					
Right-Turn Ped-Bike Adjustment Factor ( $f_{RBPB}$ )			1.000			1.000			1.000			
Work Zone Adjustment Factor ( $f_{wz}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00											
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )				1.00								
Movement Saturation Flow Rate (s), veh/h	1781	3651	0	0	2362	1168	1739	1826	1591			
Proportion of Vehicles Arriving on Green (P)	0.07	0.54	0.00	0.00	0.40	0.40	0.33	0.00	0.33	0.00	0.00	0.00
Incremental Delay Factor (k)	0.09	0.04			0.35	0.36	0.04		0.47			

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0		6.0		4.0		
Green Ratio (g/C)	0.50	0.54		0.40		0.33		
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	420	0		598		1739		
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln				0				
Permitted Effective Green Time ( $g_p$ ), s	38.5	0.0		0.0		0.0		
Permitted Service Time ( $g_u$ ), s	3.8	0.0		0.0		0.0		
Permitted Queue Service Time ( $g_{ps}$ ), s	3.8							
Time to First Blockage ( $g_t$ ), s	0.0	0.0		36.5		0.0		
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln						0		
Protected Right Effective Green Time ( $g_R$ ), s						0.0		

Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	1.198	0.000	0.681	0.000	1.389	0.000	1.557	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.091	0.000	0.112	0.000	0.153	0.000	0.153
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$	1079.66	9.66	799.33	16.45		52.90		50.77
Bicycle $F_w / F_v$	-3.64	0.97	-3.64	1.08	-3.64	1.12	-3.64	





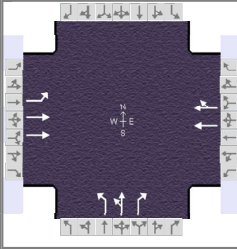
# HCS Signalized Intersection Results Graphical Summary

## General Information

Agency	Burgess & Niple		
Analyst	KB	Analysis Date	10/12/2023
Jurisdiction		Time Period	PM Peak Hour
Urban Street	SR 39	Analysis Year	2050
Intersection	SR 39 & NB I-77 Ramps	File Name	SR 39 PM.xus
Project Description	PM No Build		

## Intersection Information

Duration, h	0.250
Area Type	Other
PHF	0.94
Analysis Period	1 > 17:00



## Demand Information

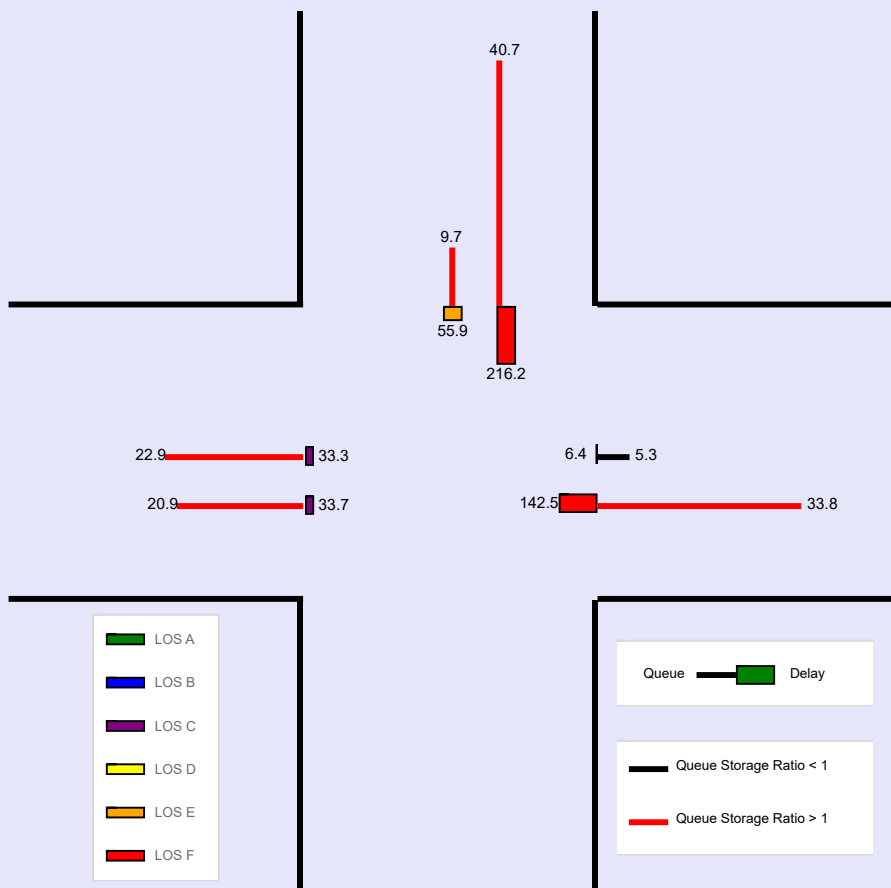
Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	140	960			820	410	270	0	370			

## Signal Information

Cycle, s	91.3	Reference Phase	2											
Offset, s	6	Reference Point	End	Green	6.8	36.5	30.0	0.0	0.0	0.0				
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0				

## Movement Group Results

Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue ( Q ), ft/ln ( 95 th percentile)	67.5	198.7			577.9	539.8	125.4	0	557.3			
Back of Queue ( Q ), veh/ln ( 95 th percentile)	2.7	7.8			22.8	21.6	4.8	0.0	21.4			
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.22	0.26			0.48	0.46	0.17	0.00	0.68			
Control Delay ( d ), s/veh	21.1	13.2			40.3	43.8	22.9	0.0	62.4			
Level of Service ( LOS)	C	B			D	D	C		E			
Approach Delay, s/veh / LOS	14.2		B	41.9		D	52.4		D	0.0		
Intersection Delay, s/veh / LOS	34.4						C					





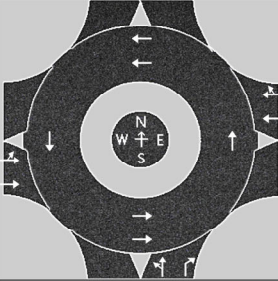
**--- Messages ---**

WARNING: According to input data, upstream feeding volume is equal to 88% of downstream exit volume during time period #1, for thru movement #2.

WARNING: The shared-plus-exclusive turn lane solution is an approximation of the HCM method, because more than three lane groups cannot be accommodated. Input data for Percent Turns in Shared Lane are used to specify proportion of turning vehicles in the shared lane.

**--- Comments ---**

# HCS Roundabouts Report

General Information				Site Information				
Analyst	Sonja Summer				Intersection	SR 39 & NB I-77 Ramps		
Agency or Co.	B&N				E/W Street Name	SR 39		
Date Performed	11/28/2023				N/S Street Name	NB Ramps		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	AM Peak Hour				Peak Hour Factor	0.98		
Project Description	Build Alternative 1				Jurisdiction			

## Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	2	0	0	0	2	0	0	0	1	1	0	0	0	0
Lane Assignment	LT		T		T	TR			LT		R					
Volume (V), veh/h	0	80	560		0		510	260	0	240	10	280				
Percent Heavy Vehicles, %	5	5	5		7		7	7	9	9	9	9				
Flow Rate (V <sub>PCE</sub> ), pc/h	0	86	600		0		557	284	0	267	11	311				
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				2							
Pedestrians Crossing, p/h	0				0				0							
Proportion of CAVs	0															

## Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.5436	4.5436		4.5436	4.5436		4.6453	4.3276				
Follow-Up Headway, s	2.5352	2.5352		2.5352	2.5352		2.6667	2.5352				

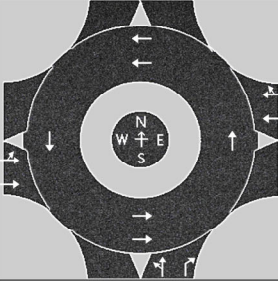
## Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	322	364		395	446		278	311				
Entry Volume, veh/h	307	346		369	417		255	285				
Circulating Flow (v <sub>c</sub> ), pc/h	0			364			686			824		
Exiting Flow (v <sub>e</sub> ), pc/h	911			824			381			0		
Capacity (C <sub>PCE</sub> ), pc/h	1420	1420		1020	1020		718	793				
Capacity (c), veh/h	1352	1352		953	953		659	727				
v/c Ratio (x)	0.23	0.26		0.39	0.44		0.39	0.39				

## Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	4.6	4.9		8.1	8.9		10.8	10.1				
Lane LOS	A	A		A	A		B	B				
95% Queue, veh	0.9	1.0		1.9	2.3		1.8	1.9				
Approach Delay, s/veh   LOS	4.7		A	8.5		A	10.4		B			
Intersection Delay, s/veh   LOS	7.8						A					

# HCS Roundabouts Report

General Information				Site Information				
Analyst	Sonja Summer				Intersection	SR 39 & NB Ramps		
Agency or Co.	B&N				E/W Street Name	SR 39		
Date Performed	11/28/2023				N/S Street Name	NB Ramps		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	PM Peak Hour				Peak Hour Factor	0.94		
Project Description	Build Alternative 1				Jurisdiction			

## Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	2	0	0	0	2	0	0	0	1	1	0	0	0	0
Lane Assignment	LT		T		T		TR		LT		R					
Volume (V), veh/h	0	140	960		0		820	410	0	270	10	370				
Percent Heavy Vehicles, %	2	2	2		2		2	2	5	5	5	5				
Flow Rate (V <sub>PCE</sub> ), pc/h	0	152	1042		0		890	445	0	302	11	413				
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				2							
Pedestrians Crossing, p/h	0				0				0							
Proportion of CAVs	0															

## Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.5436	4.5436		4.5436	4.5436		4.6453	4.3276				
Follow-Up Headway, s	2.5352	2.5352		2.5352	2.5352		2.6667	2.5352				

## Flow Computations, Capacity and v/c Ratios

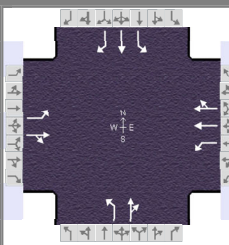
Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	561	633		627	708		313	413				
Entry Volume, veh/h	550	620		615	694		298	393				
Circulating Flow (v <sub>c</sub> ), pc/h	0			465			1194			1192		
Exiting Flow (v <sub>e</sub> ), pc/h	1455			1192			608			0		
Capacity (C <sub>PCE</sub> ), pc/h	1420	1420		930	930		450	515				
Capacity (c), veh/h	1392	1392		912	912		429	490				
v/c Ratio (x)	0.40	0.45		0.67	0.76		0.70	0.80				

## Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	6.2	6.9		15.1	19.1		28.9	34.9				
Lane LOS	A	A		C	C		D	D				
95% Queue, veh	1.9	2.4		5.4	7.5		5.2	7.5				
Approach Delay, s/veh   LOS	6.6		A	17.2		C	32.3		D			
Intersection Delay, s/veh   LOS	16.6						C					

## HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak Hour	PHF	0.91
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & Bluebell Dr		File Name	Bluebell AM.xus	
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( <i>v</i> ), veh/h	210	290	130	80	290	250	100	110	70	220	110	190

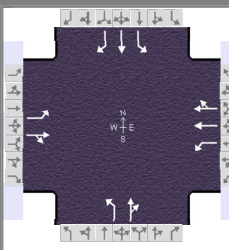
Signal Information				Signal Diagram								
Cycle, s	100.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	6.4	3.8	38.6	7.0	0.4	13.9		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	4.0	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	0.0	2.0	2.0	2.0	2.0		

Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( <i>v</i> ), veh/h	210	290	130	80	290	250	100	110	70	220	110	190
Initial Queue ( <i>Q<sub>b</sub></i> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate ( <i>s<sub>0</sub></i> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking ( <i>N<sub>m</sub></i> ), man/h		None			None			None			None	
Heavy Vehicles ( <i>P<sub>HV</sub></i> ), %	4	4		2	2		2	2		2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses ( <i>N<sub>b</sub></i> ), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type ( <i>AT</i> )	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering ( <i>I</i> )	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width ( <i>W</i> ), ft	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Turn Bay Length, ft	1170	1170		200	530		90	2000		210	500	500
Grade ( <i>P<sub>g</sub></i> ), %		0			0			0			0	
Speed Limit, mi/h	35	35	35	35	35	35	25	25	25	25	25	25

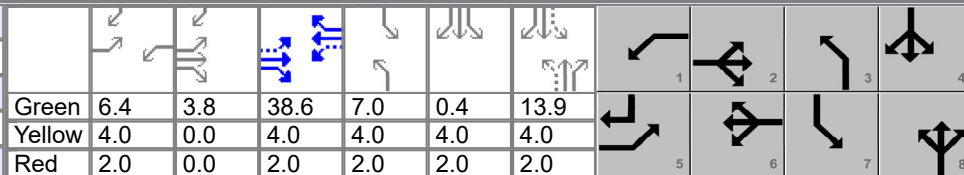
Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( <i>G<sub>max</sub></i> ) or Phase Split, s	26.0	31.0	21.0	26.0	25.0	21.0	27.0	23.0
Yellow Change Interval ( <i>Y</i> ), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clearance Interval ( <i>R<sub>c</sub></i> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Green ( <i>G<sub>min</sub></i> ), s	7	20	7	20	7	10	7	10
Start-Up Lost Time ( <i>l<sub>t</sub></i> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green ( <i>e</i> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage ( <i>PT</i> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Off	Min	Off	Min	Off	Off	Off	Off
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk ( <i>Walk</i> ), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time ( <i>PC</i> ), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

## HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Burgess & Niple			Duration, h	0.250	
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other	
Jurisdiction		Time Period	AM Peak Hour	PHF	0.91	
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00	
Intersection	SR 39 & Bluebell Dr	File Name	Bluebell AM.xus			
Project Description	No-Build					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( $v$ ), veh/h	210	290	130	80	290	250	100	110	70	220	110	190

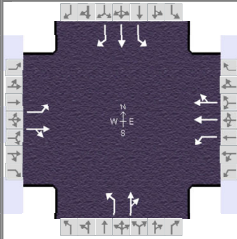
Signal Information																						
Cycle, s	100.0	Reference Phase	2	Green	6.4	3.8	38.6	7.0	0.4	13.9	Yellow	4.0	0.0	4.0	4.0	4.0	Red	2.0	0.0	2.0	2.0	2.0
Offset, s	0	Reference Point	End	Uncoordinated	No	Simult. Gap E/W	On	Force Mode	Fixed	Simult. Gap N/S	On											

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phase Duration, s	16.1	48.3	12.4	44.6	13.0	19.9	19.4	26.3
Change Period, ( $Y+R_c$ ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( $MAH$ ), s	3.1	0.0	3.1	0.0	3.3	3.3	3.3	3.3
Queue Clearance Time ( $g_s$ ), s	9.8		4.9		7.2	13.0	13.1	12.6
Green Extension Time ( $g_e$ ), s	0.4	0.0	0.1	0.0	0.1	0.9	0.3	1.1
Phase Call Probability	1.00		0.91		0.95	1.00	1.00	1.00
Max Out Probability	0.00		0.00		0.00	0.04	0.02	0.00

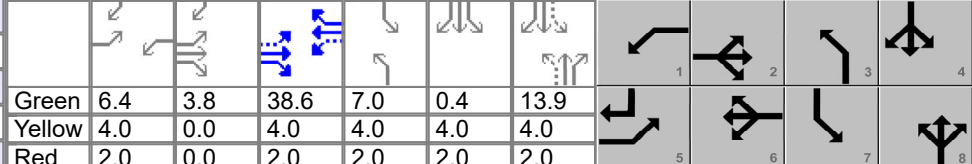
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( $v$ ), veh/h	231	462		88	318	276	110	198		242	121	209
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln	1753	1744		1781	1870	1586	1781	1748		1781	1870	1585
Queue Service Time ( $g_s$ ), s	7.8	20.8		2.9	12.6	12.9	5.2	11.0		11.1	5.5	10.6
Cycle Queue Clearance Time ( $g_c$ ), s	7.8	20.8		2.9	12.6	12.9	5.2	11.0		11.1	5.5	10.6
Green Ratio ( $g/C$ )	0.49	0.42		0.45	0.39	0.39	0.21	0.14		0.29	0.20	0.30
Capacity ( $c$ ), veh/h	458	738		368	721	611	359	243		345	380	483
Volume-to-Capacity Ratio ( $X$ )	0.504	0.626		0.239	0.441	0.451	0.306	0.814		0.700	0.318	0.432
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)	138.8	356.5		51.9	245.2	218.9	103.9	217		214.4	115.8	184.2
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)	5.4	13.8		2.0	9.7	8.8	4.1	8.5		8.4	4.6	7.3
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)	0.12	0.30		0.26	0.46	0.42	1.15	0.11		1.02	0.23	0.37
Uniform Delay ( $d_1$ ), s/veh	16.3	22.6		17.9	22.7	22.9	33.4	41.8		30.0	33.9	27.8
Incremental Delay ( $d_2$ ), s/veh	0.3	4.0		0.1	2.0	2.4	0.2	2.6		1.0	0.2	0.2
Initial Queue Delay ( $d_3$ ), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay ( $d$ ), s/veh	16.6	26.6		18.1	24.7	25.2	33.5	44.3		31.0	34.1	28.1
Level of Service ( LOS )	B	C		B	C	C	C	D		C	C	C
Approach Delay, s/veh / LOS	23.3	C		24.1	C		40.5	D		30.6	C	
Intersection Delay, s/veh / LOS	27.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	2.11	B	2.13	B	2.13	B
Bicycle LOS Score / LOS	1.63	B	1.05	A	1.00	A	1.43	A

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information		
Agency	Burgess & Niple			Duration, h	0.250	
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other	
Jurisdiction		Time Period	AM Peak Hour	PHF	0.91	
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00	
Intersection	SR 39 & Bluebell Dr	File Name	Bluebell AM.xus			
Project Description	No-Build					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	210	290	130	80	290	250	100	110	70	220	110	190

Signal Information																
Cycle, s	100.0	Reference Phase	2	Green	6.4	3.8	38.6	7.0	0.4	13.9	Yellow	4.0	0.0	4.0	4.0	4.0
Offset, s	0	Reference Point	End	Red	2.0	0.0	2.0	2.0	2.0	2.0	Uncoordinated	No	Simult. Gap E/W	On	Force Mode	Fixed
Simult. Gap N/S	On	Simult. Gap N/S	On													

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.969	0.969	1.000	0.984	0.984	1.000	0.984	0.984	1.000	0.984	0.984	0.984
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		0.947	0.947		0.848	0.848		0.935	0.935		0.000	0.847
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000			1.000			1.000
Work Zone Adjustment Factor ( $f_{WZ}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00			1.00			1.00			1.00		
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )												
Movement Saturation Flow Rate (s), veh/h	1753	1204	540	1781	1876	1580	1781	1068	680	1781	1870	1585
Proportion of Vehicles Arriving on Green (P)	0.10	0.42	0.42	0.06	0.39	0.39	0.07	0.14	0.14	0.13	0.20	0.20
Incremental Delay Factor (k)	0.04	0.50		0.04	0.50	0.50	0.04	0.04		0.04	0.04	0.04

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Green Ratio (g/C)	0.49	0.42	0.45	0.39	0.21	0.14	0.29	0.20
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	811	0	931	0	1271	0	1185	0
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln								
Permitted Effective Green Time ( $g_p$ ), s	38.6	0.0	38.6	0.0	13.9	0.0	15.9	0.0
Permitted Service Time ( $g_u$ ), s	25.6	0.0	19.5	0.0	12.8	0.0	2.9	0.0
Permitted Queue Service Time ( $g_{ps}$ ), s	5.1		2.0		0.1		2.9	
Time to First Blockage ( $g_t$ ), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln								1585
Protected Right Effective Green Time ( $g_R$ ), s								10.1

Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	1.198	0.000	1.389	0.000	1.389	0.000	1.389	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.113	0.000	0.118	0.000	0.145	0.000	0.139
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$	846.23	16.64	771.10	18.88	278.06	37.06	406.20	31.75
Bicycle $F_w / F_v$	-3.64	1.14	-3.64	0.56	-3.64	0.51	-3.64	0.94



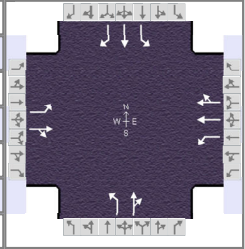


# HCS Signalized Intersection Results Graphical Summary

## General Information

Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak Hour	PHF	0.91
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & Bluebell Dr	File Name	Bluebell AM.xus		
Project Description	No-Build				

## Intersection Information



## Demand Information

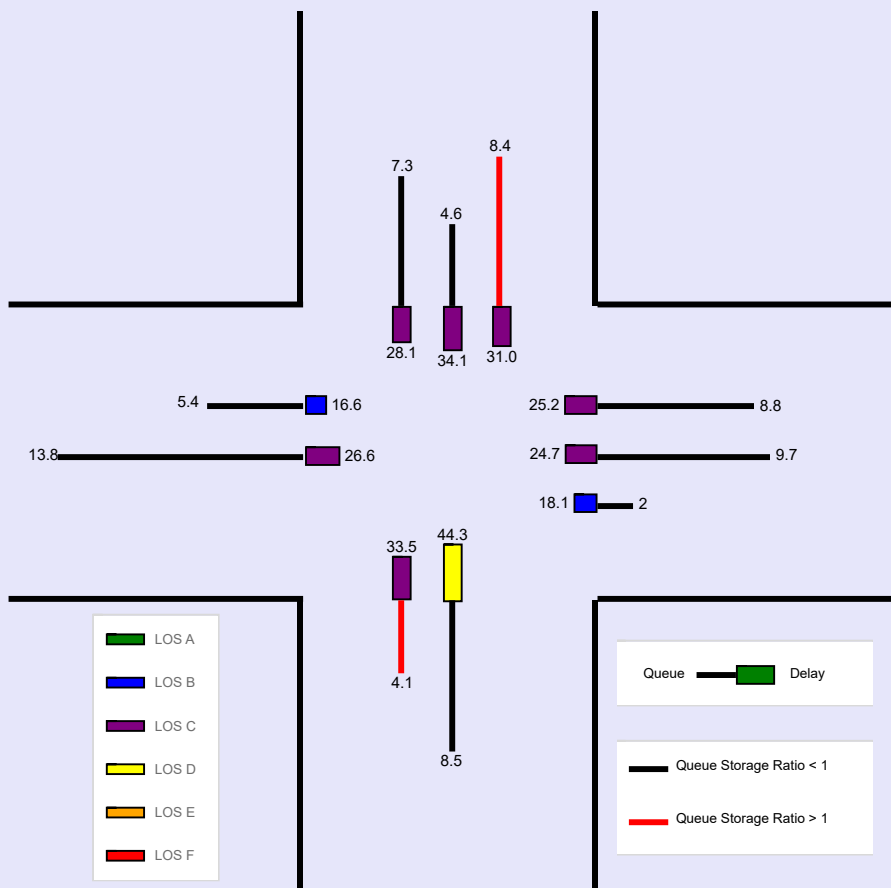
Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	210	290	130	80	290	250	100	110	70	220	110	190

## Signal Information

Cycle, s	100.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	6.4	3.8	38.6	7.0	0.4	13.9			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	4.0			
				Red	2.0	0.0	2.0	2.0	2.0	2.0			

## Movement Group Results

Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue ( Q ), ft/ln ( 95 th percentile)	138.8	356.5		51.9	245.2	218.9	103.9	217		214.4	115.8	184.2
Back of Queue ( Q ), veh/ln ( 95 th percentile)	5.4	13.8		2.0	9.7	8.8	4.1	8.5		8.4	4.6	7.3
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.12	0.30		0.26	0.46	0.42	1.15	0.11		1.02	0.23	0.37
Control Delay ( d ), s/veh	16.6	26.6		18.1	24.7	25.2	33.5	44.3		31.0	34.1	28.1
Level of Service ( LOS)	B	C		B	C	C	C	D		C	C	C
Approach Delay, s/veh / LOS	23.3	C		24.1	C		40.5	D		30.6	C	
Intersection Delay, s/veh / LOS	27.7						C					





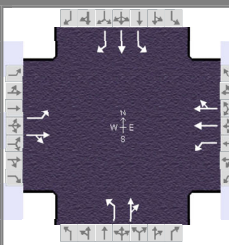
**--- Messages ---**

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

**--- Comments ---**

## HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.92
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & Bluebell Dr	File Name	Bluebell PM.xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	250	500	170	80	510	250	180	110	60	280	150	300

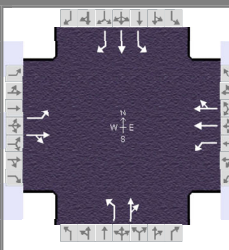
Signal Information				Phase Diagrams											
Cycle, s	120.0	Reference Phase	2												
Offset, s	0	Reference Point	End	Green	6.6	0.1	48.3	8.0	5.5	15.5	1	2	3	4	
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	4.0	4.0	5	6	7	8	
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	2.0	2.0	2.0					

Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	250	500	170	80	510	250	180	110	60	280	150	300
Initial Queue ( Q <sub>b</sub> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate ( s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking ( N <sub>m</sub> ), man/h		None			None			None			None	
Heavy Vehicles ( P <sub>HV</sub> ), %	2	2		2	2		1	1		1	1	1
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses ( N <sub>b</sub> ), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type ( AT )	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering ( I )	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width ( W ), ft	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Turn Bay Length, ft	1170	1170		200	530		90	2000		210	500	500
Grade ( P <sub>g</sub> ), %		0			0			0			0	
Speed Limit, mi/h	35	35	35	35	35	35	25	25	25	25	25	25

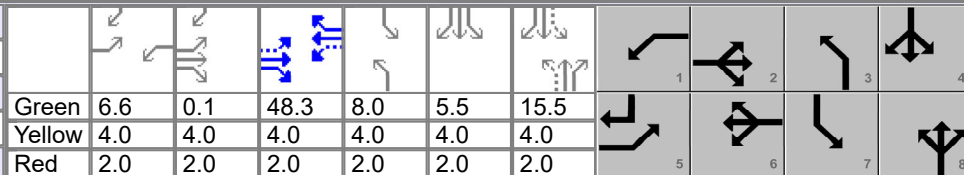
Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( G <sub>max</sub> ) or Phase Split, s	26.0	45.0	18.0	37.0	14.0	16.0	41.0	43.0
Yellow Change Interval ( Y ), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clearance Interval ( R <sub>c</sub> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Green ( G <sub>min</sub> ), s	7	20	7	20	7	10	7	10
Start-Up Lost Time ( l <sub>t</sub> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green ( e ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage ( P <sub>T</sub> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Off	Min	Off	Min	Off	Off	Off	Off
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk ( Walk ), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time ( P <sub>C</sub> ), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

## HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Burgess & Niple			Duration, h	0.250	
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other	
Jurisdiction		Time Period	PM Peak Hour	PHF	0.92	
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00	
Intersection	SR 39 & Bluebell Dr	File Name	Bluebell PM.xus			
Project Description	No-Build					

Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	250	500	170	80	510	250	180	110	60	280	150	300

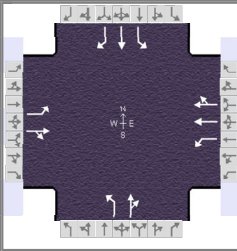
Signal Information																		
Cycle, s	120.0	Reference Phase	2	Green	6.6	0.1	48.3	8.0	5.5	15.5	Yellow	4.0	4.0	4.0	4.0	4.0	4.0	
Offset, s	0	Reference Point	End	Red	2.0	2.0	2.0	2.0	2.0	2.0	Uncoordinated	No	Simult. Gap E/W	On	Force Mode	Fixed	Simult. Gap N/S	On

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phase Duration, s	18.7	60.4	12.6	54.3	14.0	21.5	25.5	33.0
Change Period, ( $Y+R_c$ ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( $MAH$ ), s	3.1	0.0	3.1	0.0	3.3	3.4	3.3	3.4
Queue Clearance Time ( $g_s$ ), s	12.3		5.3		10.0	14.2	18.9	22.6
Green Extension Time ( $g_e$ ), s	0.5	0.0	0.1	0.0	0.0	1.3	0.6	1.4
Phase Call Probability	1.00		0.94		1.00	1.00	1.00	1.00
Max Out Probability	0.00		0.00		1.00	0.03	0.00	0.01

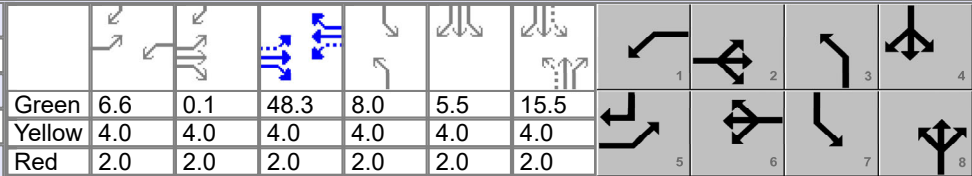
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( $v$ ), veh/h	272	728		87	437	389	196	185		304	163	326
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln	1781	1789		1781	1870	1662	1795	1773		1795	1885	1598
Queue Service Time ( $g_s$ ), s	10.3	45.1		3.3	21.9	21.9	8.0	12.2		16.9	8.8	20.6
Cycle Queue Clearance Time ( $g_c$ ), s	10.3	45.1		3.3	21.9	21.9	8.0	12.2		16.9	8.8	20.6
Green Ratio ( $g/C$ )	0.53	0.45		0.46	0.40	0.40	0.20	0.13		0.31	0.22	0.33
Capacity ( $c$ ), veh/h	394	811		203	753	669	339	229		385	424	529
Volume-to-Capacity Ratio ( $X$ )	0.689	0.898		0.429	0.581	0.582	0.578	0.808		0.790	0.385	0.617
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)	190.1	752		63.8	394.3	355.4	236.4	239.1		305.6	188.9	322
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)	7.5	29.6		2.5	15.5	14.2	9.4	9.5		12.1	7.5	12.8
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)	0.16	0.64		0.32	0.74	0.68	2.63	0.12		1.46	0.38	0.64
Uniform Delay ( $d_1$ ), s/veh	20.0	30.3		26.5	28.0	28.0	43.8	50.8		35.7	39.5	33.7
Incremental Delay ( $d_2$ ), s/veh	0.8	14.8		0.5	3.3	3.7	1.6	2.6		1.4	0.2	0.4
Initial Queue Delay ( $d_3$ ), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay ( $d$ ), s/veh	20.8	45.1		27.0	31.2	31.7	45.4	53.4		37.1	39.7	34.2
Level of Service (LOS)	C	D		C	C	C	D	D		D	D	C
Approach Delay, s/veh / LOS	38.5		D	31.0		C	49.3		D	36.4		D
Intersection Delay, s/veh / LOS	37.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	2.11	B	2.14	B	2.13	B
Bicycle LOS Score / LOS	2.14	B	1.24	A	1.12	A	1.80	B

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information		
Agency	Burgess & Niple			Duration, h	0.250	
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other	
Jurisdiction		Time Period	PM Peak Hour	PHF	0.92	
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00	
Intersection	SR 39 & Bluebell Dr	File Name	Bluebell PM.xus			
Project Description	No-Build					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	250	500	170	80	510	250	180	110	60	280	150	300

Signal Information																	
Cycle, s	120.0	Reference Phase	2	Green	6.6	0.1	48.3	8.0	5.5	15.5	Yellow	4.0	4.0	4.0	4.0	4.0	4.0
Offset, s	0	Reference Point	End	Red	2.0	2.0	2.0	2.0	2.0	2.0	Force Mode	Fixed	Simult. Gap E/W	On	Simult. Gap N/S	On	

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.984	0.984	1.000	0.984	0.984	1.000	0.992	0.992	1.000	0.992	0.992	0.992
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		0.956	0.956		0.888	0.888		0.940	0.940		0.000	0.847
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000			1.000			1.000
Work Zone Adjustment Factor ( $f_{wz}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00			1.00			1.00			1.00		
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )												
Movement Saturation Flow Rate (s), veh/h	1781	1335	454	1781	2372	1160	1795	1147	626	1795	1885	1598
Proportion of Vehicles Arriving on Green (P)	0.11	0.45	0.45	0.06	0.40	0.40	0.07	0.13	0.13	0.16	0.22	0.22
Incremental Delay Factor (k)	0.04	0.50		0.04	0.50	0.50	0.11	0.04		0.04	0.04	0.04

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Green Ratio (g/C)	0.53	0.45	0.46	0.40	0.20	0.13	0.31	0.22
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	663	0	727	0	1233	0	1208	0
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln								
Permitted Effective Green Time ( $g_p$ ), s	50.3	0.0	48.3	0.0	15.5	0.0	17.5	0.0
Permitted Service Time ( $g_u$ ), s	26.3	0.0	7.3	0.0	15.5	0.0	3.3	0.0
Permitted Queue Service Time ( $g_{ps}$ ), s	16.6		5.6		5.9		3.3	
Time to First Blockage ( $g_t$ ), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln								1598
Protected Right Effective Green Time ( $g_R$ ), s								12.7

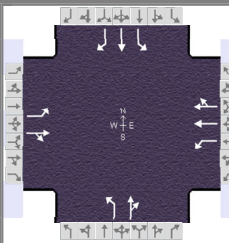
Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	1.198	0.000	1.389	0.000	1.389	0.000	1.389	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.116	0.000	0.123	0.000	0.153	0.000	0.144
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$	906.57	17.93	804.78	21.43	257.98	45.52	449.86	36.04
Bicycle $F_w / F_v$	-3.64	1.65	-3.64	0.75	-3.64	0.63	-3.64	1.31





# HCS Signalized Intersection Results Graphical Summary

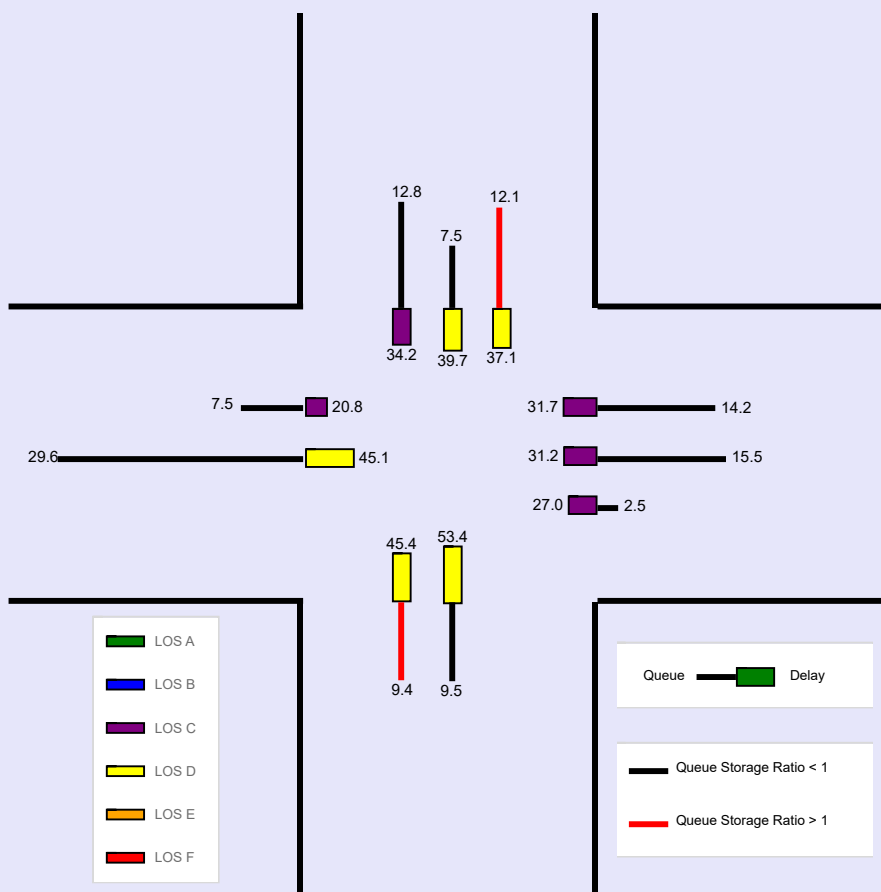
General Information				Intersection Information			
Agency	Burgess & Niple			Duration, h	0.250		
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other		
Jurisdiction		Time Period	PM Peak Hour	PHF	0.92		
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00		
Intersection	SR 39 & Bluebell Dr	File Name	Bluebell PM.xus				
Project Description	No-Build						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	250	500	170	80	510	250	180	110	60	280	150	300

Signal Information				Signal Phases								
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	6.6	0.1	48.3	8.0	5.5	15.5		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	4.0	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	2.0	2.0	2.0		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Back of Queue ( Q ), ft/ln ( 95 th percentile)	190.1	752		63.8	394.3	355.4	236.4	239.1		305.6	188.9	322
Back of Queue ( Q ), veh/ln ( 95 th percentile)	7.5	29.6		2.5	15.5	14.2	9.4	9.5		12.1	7.5	12.8
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.16	0.64		0.32	0.74	0.68	2.63	0.12		1.46	0.38	0.64
Control Delay ( d ), s/veh	20.8	45.1		27.0	31.2	31.7	45.4	53.4		37.1	39.7	34.2
Level of Service ( LOS)	C	D		C	C	C	D	D		D	D	C
Approach Delay, s/veh / LOS	38.5		D	31.0		C	49.3		D	36.4		D
Intersection Delay, s/veh / LOS	37.1						D					





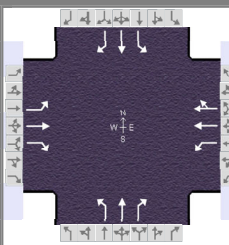
**--- Messages ---**

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

**--- Comments ---**

## HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak Hour	PHF	0.91
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & Bluebell Dr	File Name	Scenario4_Bluebell_AM.xus		
Project Description	Build Alternativie 4				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	310	290	130	80	290	250	100	110	70	220	110	190

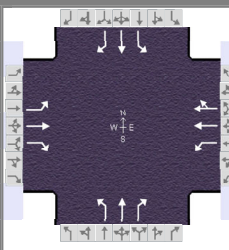
Signal Information				Phase Diagrams								
Cycle, s	100.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	6.4	1.1	39.0	7.2	0.7	9.6		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	4.0	4.0		
Force Mode	Float	Simult. Gap N/S	On	Red	2.0	2.0	2.0	2.0	2.0	2.0		

Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	310	290	130	80	290	250	100	110	70	220	110	190
Initial Queue ( $Q_b$ ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate ( $s_o$ ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking ( $N_m$ ), man/h		None			None			None			None	
Heavy Vehicles ( $P_{HV}$ ), %	4	4	4	2	2		2	2	2	2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses ( $N_b$ ), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type ( $AT$ )	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering ( $I$ )	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width ( $W$ ), ft	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	1170	1170	300	200	530		200	2000	400	350	500	500
Grade ( $P_g$ ), %		0			0			0			0	
Speed Limit, mi/h	35	35	35	35	35	35	25	25	25	25	25	25

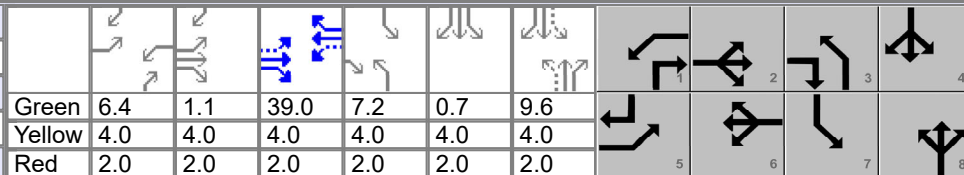
Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( $G_{max}$ ) or Phase Split, s	28.0	33.0	21.0	26.0	24.0	19.0	27.0	22.0
Yellow Change Interval ( $Y$ ), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clearance Interval ( $R_c$ ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Green ( $G_{min}$ ), s	7	20	7	20	7	10	7	10
Start-Up Lost Time ( $l_t$ ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green ( $e$ ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage ( $PT$ ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Off	Min	Off	Min	Off	Off	Off	Off
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk ( $Walk$ ), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time ( $PC$ ), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

## HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Burgess & Niple			Duration, h	0.250	
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other	
Jurisdiction		Time Period	AM Peak Hour	PHF	0.91	
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00	
Intersection	SR 39 & Bluebell Dr	File Name	Scenario4_Bluebell_AM.xus			
Project Description	Build Alternativie 4					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( $v$ ), veh/h	310	290	130	80	290	250	100	110	70	220	110	190

Signal Information																								
Cycle, s	100.0	Reference Phase	2	Green	6.4	1.1	39.0	7.2	0.7	9.6	Yellow	4.0	4.0	4.0	4.0	4.0	4.0	Red	2.0	2.0	2.0	2.0	2.0	2.0
Offset, s	0	Reference Point	End	Uncoordinated	No	Simult. Gap E/W	On	Force Mode	Float	Simult. Gap N/S	On													

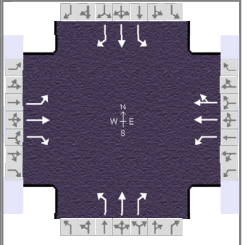
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	3.0	1.1	4.0	1.1	3.0	1.1	3.0
Phase Duration, s	19.5	52.0	12.4	45.0	13.2	15.6	20.0	22.3
Change Period, ( $Y+R_c$ ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( $MAH$ ), s	3.1	0.0	3.1	0.0	3.3	3.3	3.3	3.3
Queue Clearance Time ( $g_s$ ), s	13.0		4.8		7.5	8.2	13.7	12.6
Green Extension Time ( $g_e$ ), s	0.5	0.0	0.1	0.0	0.1	0.2	0.3	0.5
Phase Call Probability	1.00		0.91		0.95	1.00	1.00	1.00
Max Out Probability	0.01		0.00		0.00	0.47	0.03	0.99

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( $v$ ), veh/h	341	319	143	88	318	276	110	121	77	242	121	209
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln	1753	1841	1560	1781	1870	1586	1781	1870	1585	1781	1870	1585
Queue Service Time ( $g_s$ ), s	11.0	11.3	4.7	2.8	12.5	12.8	5.5	6.2	4.3	11.7	5.8	10.6
Cycle Queue Clearance Time ( $g_c$ ), s	11.0	11.3	4.7	2.8	12.5	12.8	5.5	6.2	4.3	11.7	5.8	10.6
Green Ratio ( $g/C$ )	0.54	0.46	0.53	0.45	0.39	0.39	0.17	0.10	0.16	0.26	0.16	0.30
Capacity ( $c$ ), veh/h	520	847	831	533	729	618	310	180	254	364	306	473
Volume-to-Capacity Ratio ( $X$ )	0.656	0.376	0.172	0.165	0.436	0.446	0.355	0.672	0.303	0.665	0.395	0.442
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)	191	219.3	76.7	51.3	243.8	217.6	110.1	136.2	77	223.7	122.8	186.2
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)	7.4	8.5	3.0	2.0	9.6	8.7	4.3	5.4	3.0	8.8	4.8	7.3
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)	0.16	0.19	0.26	0.26	0.46	0.42	0.55	0.07	0.19	0.64	0.25	0.37
Uniform Delay ( $d_1$ ), s/veh	14.8	17.6	12.0	15.9	22.4	22.6	36.9	43.7	37.1	32.5	37.4	28.4
Incremental Delay ( $d_2$ ), s/veh	0.6	1.3	0.4	0.1	1.9	2.3	0.3	1.6	0.2	0.8	0.3	0.2
Initial Queue Delay ( $d_3$ ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( $d$ ), s/veh	15.4	18.9	12.5	16.0	24.3	24.9	37.1	45.3	37.3	33.2	37.7	28.6
Level of Service (LOS)	B	B	B	B	C	C	D	D	D	C	D	C
Approach Delay, s/veh / LOS	16.3		B	23.5		C	40.4		D	32.5		C
Intersection Delay, s/veh / LOS	25.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	2.11	B	2.14	B	2.30	B
Bicycle LOS Score / LOS	1.81	B	1.05	A	1.00	A	1.43	A

## HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	KB	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	AM Peak Hour	PHF	0.91
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 7:00
Intersection	SR 39 & Bluebell Dr	File Name	Scenario4_ Bluebell_ AM.xus		
Project Description	Build Alternativie 4				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	310	290	130	80	290	250	100	110	70	220	110	190

Signal Information												
Cycle, s	100.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	6.4	1.1	39.0	7.2	0.7	9.6		
Force Mode	Float	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	4.0	4.0	4.0		
				Red	2.0	2.0	2.0	2.0	2.0	2.0		

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.969	0.969	0.969	0.984	0.984	1.000	0.984	0.984	0.984	0.984	0.984	0.984
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		0.000	0.847		0.848	0.848		0.000	0.847		0.000	0.847
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000			1.000			1.000
Work Zone Adjustment Factor ( $f_{wz}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00			1.00			1.00			1.00		
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )												
Movement Saturation Flow Rate (s), veh/h	1753	1841	1560	1781	1876	1580	1781	1870	1585	1781	1870	1585
Proportion of Vehicles Arriving on Green (P)	0.13	0.46	0.46	0.06	0.39	0.39	0.07	0.10	0.10	0.14	0.16	0.16
Incremental Delay Factor (k)	0.05	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Green Ratio (g/C)	0.54	0.46	0.45	0.39	0.17	0.10	0.26	0.16
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	811	0	1061	0	1271	0	1271	0
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln								
Permitted Effective Green Time ( $g_p$ ), s	41.0	0.0	39.0	0.0	9.6	0.0	11.6	0.0
Permitted Service Time ( $g_u$ ), s	26.1	0.0	32.7	0.0	8.6	0.0	3.4	0.0
Permitted Queue Service Time ( $g_{ps}$ ), s	10.8		0.6		0.1		1.9	
Time to First Blockage ( $g_t$ ), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage ( $g_{fs}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln			1560				1585	1585
Protected Right Effective Green Time ( $g_R$ ), s			7.2				6.4	13.5

Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	1.389	0.000	1.389	0.000	1.389	0.000	1.557	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.107	0.000	0.117	0.000	0.149	0.000	0.143
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$	920.65	14.56	779.06	18.63	192.25	40.85	326.89	34.99
Bicycle $F_w / F_v$	-3.64	1.32	-3.64	0.56	-3.64	0.51	-3.64	0.94



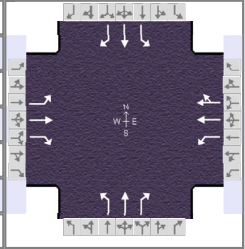
# HCS Signalized Intersection Results Graphical Summary

## General Information

Agency	Burgess & Niple		
Analyst	KB	Analysis Date	Jan 16, 2024
Jurisdiction		Time Period	AM Peak Hour
Urban Street	SR 39	Analysis Year	2050
Intersection	SR 39 & Bluebell Dr	File Name	Scenario4_Bluebell_AM.xus
Project Description	Build Alternativie 4		

## Intersection Information

Duration, h	0.250
Area Type	Other
PHF	0.91
Analysis Period	1 > 7:00



## Demand Information

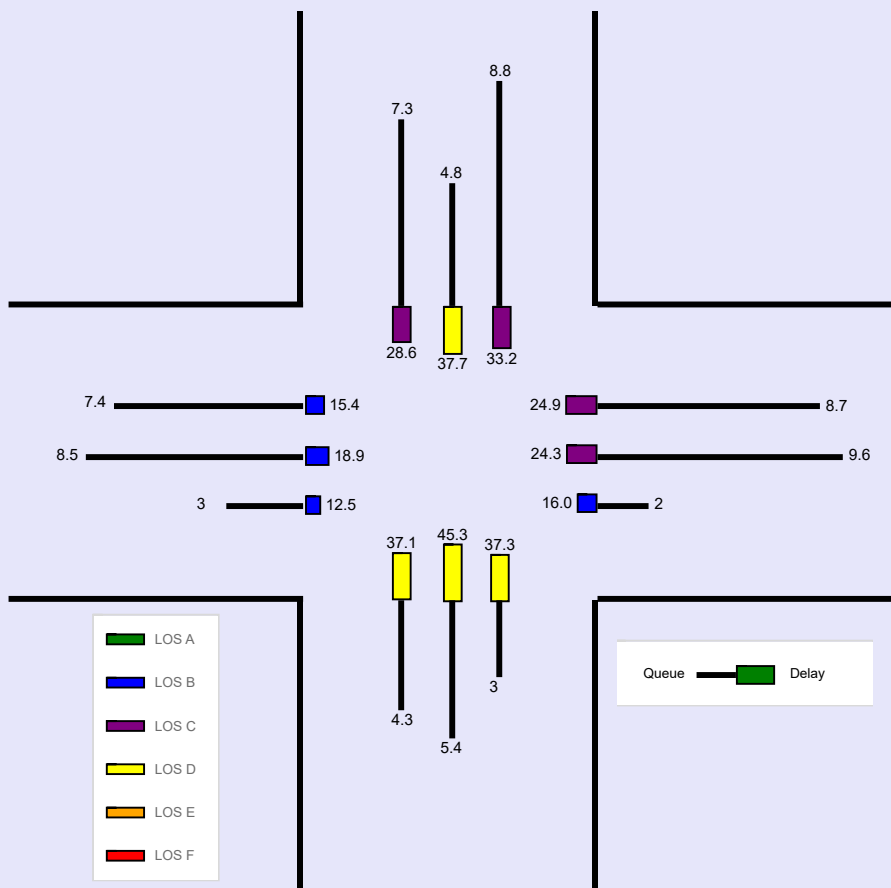
Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	310	290	130	80	290	250	100	110	70	220	110	190

## Signal Information

Cycle, s	100.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	6.4	1.1	39.0	7.2	0.7	9.6			
Force Mode	Float	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	4.0	4.0	4.0			
				Red	2.0	2.0	2.0	2.0	2.0	2.0			

## Movement Group Results

Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue ( Q ), ft/ln ( 95 th percentile)	191	219.3	76.7	51.3	243.8	217.6	110.1	136.2	77	223.7	122.8	186.2
Back of Queue ( Q ), veh/ln ( 95 th percentile)	7.4	8.5	3.0	2.0	9.6	8.7	4.3	5.4	3.0	8.8	4.8	7.3
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.16	0.19	0.26	0.26	0.46	0.42	0.55	0.07	0.19	0.64	0.25	0.37
Control Delay ( d ), s/veh	15.4	18.9	12.5	16.0	24.3	24.9	37.1	45.3	37.3	33.2	37.7	28.6
Level of Service ( LOS)	B	B	B	B	C	C	D	D	D	C	D	C
Approach Delay, s/veh / LOS	16.3 / B			23.5 / C			40.4 / D			32.5 / C		
Intersection Delay, s/veh / LOS	25.4						C					







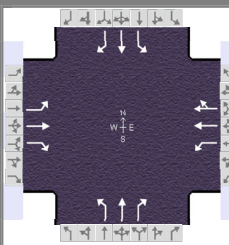
**--- Messages ---**

No errors or warnings exist.

**--- Comments ---**

## HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	B&N			Duration, h	0.250
Analyst	Sonja Summer	Analysis Date	Jan 16, 2024	Area Type	Other
Jurisdiction		Time Period	PM Peak Hour	PHF	0.92
Urban Street	SR 39	Analysis Year	2050	Analysis Period	1 > 17:00
Intersection	SR 39 & Bluebell Dr	File Name	Scenario4_Bluebell_PM.xus		
Project Description	Build Alternative 4				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	350	500	170	80	510	250	180	110	60	280	150	300

Signal Information														
Cycle, s	100.0	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	No	Simult. Gap E/W	On											
Force Mode	Fixed	Simult. Gap N/S	On											
				Green	6.4	3.1	35.6	8.0	11.0	0.0				
				Yellow	4.0	4.0	4.0	4.0	4.0	0.0				
				Red	2.0	2.0	2.0	2.0	2.0	0.0				

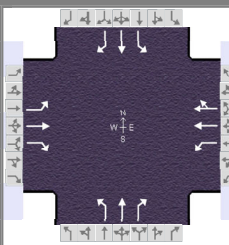
Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	350	500	170	80	510	250	180	110	60	280	150	300
Initial Queue ( $Q_b$ ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate ( $s_o$ ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking ( $N_m$ ), man/h	None			None			None			None		
Heavy Vehicles ( $P_{HV}$ ), %	2	2	2	2	2		1	1	1	1	1	1
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses ( $N_b$ ), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type ( $AT$ )	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering ( $I$ )	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width ( $W$ ), ft	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	1170	1170	300	200	530		200	2000	400	350	500	500
Grade ( $P_g$ ), %		0			0			0			0	
Speed Limit, mi/h	35	35	35	35	35	35	25	25	25	25	25	25

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( $G_{max}$ ) or Phase Split, s	37.0	39.0	24.0	26.0	14.0	17.0	20.0	23.0
Yellow Change Interval ( $Y$ ), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clearance Interval ( $R_c$ ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Green ( $G_{min}$ ), s	7	20	7	20	7	10	7	10
Start-Up Lost Time ( $l_t$ ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green ( $e$ ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage ( $PT$ ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Off	Min	Off	Min	Min	Off	Max	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk ( $Walk$ ), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time ( $PC$ ), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

## HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	B&N			Duration, h	0.250		
Analyst	Sonja Summer		Analysis Date	Jan 16, 2024		Area Type	Other
Jurisdiction			Time Period	PM Peak Hour		PHF	0.92
Urban Street	SR 39		Analysis Year	2050		Analysis Period	1 > 17:00
Intersection	SR 39 & Bluebell Dr		File Name	Scenario4_Bluebell_PM.xus			
Project Description	Build Alternative 4						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	350	500	170	80	510	250	180	110	60	280	150	300

Signal Information															
Cycle, s	100.0	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	No	Simult. Gap E/W	On	Green	6.4	3.1	35.6	8.0	11.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	4.0	4.0	0.0					
				Red	2.0	2.0	2.0	2.0	2.0	0.0					

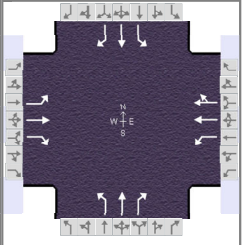
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	3.0	1.1	4.0	1.1	3.0	1.1	3.0
Phase Duration, s	21.4	50.6	12.4	41.6	14.0	17.0	20.0	23.0
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( MAH ), s	3.1	0.0	3.1	0.0	3.3	3.4	3.3	3.4
Queue Clearance Time ( g <sub>s</sub> ), s	14.8		5.0		10.0	8.0	16.0	19.0
Green Extension Time ( g <sub>e</sub> ), s	0.7	0.0	0.1	0.0	0.0	0.6	0.0	0.0
Phase Call Probability	1.00		0.91		1.00	1.00	1.00	1.00
Max Out Probability	0.00		0.00		1.00	1.00	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	380	543	185	87	437	389	196	120	65	304	163	326
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1781	1870	1585	1781	1870	1662	1795	1885	1598	1795	1885	1598
Queue Service Time ( g <sub>s</sub> ), s	12.8	22.7	6.3	3.0	19.6	19.7	8.0	6.0	3.5	14.0	7.9	17.0
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	12.8	22.7	6.3	3.0	19.6	19.7	8.0	6.0	3.5	14.0	7.9	17.0
Green Ratio ( g/C )	0.53	0.45	0.53	0.42	0.36	0.36	0.19	0.11	0.17	0.27	0.17	0.32
Capacity ( c ), veh/h	452	835	834	358	665	591	304	207	278	387	320	518
Volume-to-Capacity Ratio ( X )	0.841	0.651	0.222	0.243	0.657	0.659	0.644	0.577	0.235	0.786	0.509	0.629
Back of Queue ( Q ), ft/ln ( 95 th percentile)	223.4	395.8	102.2	54.9	365.3	330.6	42.7	134.5	63.1	319.6	167.4	281
Back of Queue ( Q ), veh/ln ( 95 th percentile)	8.8	15.6	4.0	2.2	14.4	13.2	1.7	5.3	2.5	12.7	6.6	11.2
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.19	0.34	0.34	0.27	0.69	0.63	0.21	0.07	0.16	0.91	0.33	0.56
Uniform Delay ( d <sub>1</sub> ), s/veh	18.9	21.6	12.7	19.1	27.1	27.1	37.7	42.3	35.6	33.0	37.7	28.7
Incremental Delay ( d <sub>2</sub> ), s/veh	2.5	3.9	0.6	0.1	5.0	5.7	3.6	2.6	0.2	14.8	0.6	1.9
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh	21.4	25.5	13.3	19.2	32.1	32.8	41.3	44.9	35.7	47.8	38.3	30.5
Level of Service ( LOS )	C	C	B	B	C	C	D	D	D	D	D	C
Approach Delay, s/veh / LOS	22.1		C	31.2		C	41.5		D	38.7		D
Intersection Delay, s/veh / LOS	31.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	2.11	B	2.14	B	2.30	B
Bicycle LOS Score / LOS	2.32	B	1.24	A	1.12	A	1.80	B

## HCS Signalized Intersection Intermediate Values

General Information					Intersection Information				
Agency	B&N				Duration, h	0.250			
Analyst	Sonja Summer		Analysis Date	Jan 16, 2024		Area Type	Other		
Jurisdiction			Time Period	PM Peak Hour		PHF	0.92		
Urban Street	SR 39		Analysis Year	2050		Analysis Period	1 > 17:00		
Intersection	SR 39 & Bluebell Dr		File Name	Scenario4_Bluebell_PM.xus					
Project Description	Build Alternative 4								



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	350	500	170	80	510	250	180	110	60	280	150	300

Signal Information													
Cycle, s	100.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On										
Force Mode	Fixed	Simult. Gap N/S	On										
				Green	6.4	3.1	35.6	8.0	11.0	0.0			
				Yellow	4.0	4.0	4.0	4.0	4.0	0.0			
				Red	2.0	2.0	2.0	2.0	2.0	0.0			

Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor ( $f_w$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor ( $f_{HVg}$ )	0.984	0.984	0.984	0.984	0.984	1.000	0.992	0.992	0.992	0.992	0.992	0.992
Parking Activity Adjustment Factor ( $f_p$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor ( $f_{bb}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor ( $f_a$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor ( $f_{LU}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor ( $f_{LT}$ )	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor ( $f_{RT}$ )		0.000	0.847		0.888	0.888		0.000	0.847		0.000	0.847
Left-Turn Pedestrian Adjustment Factor ( $f_{LPB}$ )	1.000			1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor ( $f_{RPB}$ )			1.000			1.000			1.000			1.000
Work Zone Adjustment Factor ( $f_{WZ}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor ( $f_{DDI}$ )	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ( $f_{CAV,prot}$ )	1.00			1.00			1.00			1.00		
Left-Turn Perm. CAV Adj. Factor ( $f_{CAV,perm}$ )												
Movement Saturation Flow Rate (s), veh/h	1781	1870	1585	1781	2372	1160	1795	1885	1598	1795	1885	1598
Proportion of Vehicles Arriving on Green (P)	0.15	0.45	0.45	0.06	0.36	0.36	0.08	0.11	0.11	0.14	0.17	0.17
Incremental Delay Factor (k)	0.06	0.50	0.50	0.04	0.50	0.50	0.17	0.11	0.04	0.50	0.05	0.16

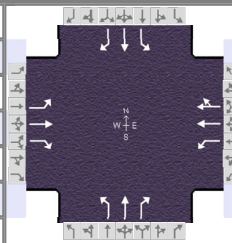
Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time ( $t_L$ )	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Green Ratio (g/C)	0.53	0.45	0.42	0.36	0.19	0.11	0.27	0.17
Permitted Saturation Flow Rate ( $s_p$ ), veh/h/ln	663	0	863	0	1233	0	1282	0
Shared Saturation Flow Rate ( $s_{sh}$ ), veh/h/ln								
Permitted Effective Green Time ( $g_p$ ), s	37.6	0.0	35.6	0.0	11.0	0.0	13.0	0.0
Permitted Service Time ( $g_u$ ), s	15.8	0.0	19.9	0.0	7.1	0.0	5.0	0.0
Permitted Queue Service Time ( $g_{ps}$ ), s	15.8		1.8		3.7		3.9	
Time to First Blockage ( $g_t$ ), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage ( $g_{ts}$ ), s								
Protected Right Saturation Flow ( $s_R$ ), veh/h/ln			1585				1598	1598
Protected Right Effective Green Time ( $g_R$ ), s			8.0				6.4	15.4

Multimodal	EB		WB		NB		SB	
Pedestrian $F_w / F_v$	1.389	0.000	1.389	0.000	1.389	0.000	1.557	0.000
Pedestrian $F_s / F_{delay}$	0.000	0.109	0.000	0.122	0.000	0.148	0.000	0.142
Pedestrian $M_{corner} / M_{cw}$	0.00		0.00		0.00		0.00	
Bicycle $c_b / d_b$	892.50	15.33	711.09	20.77	220.00	39.61	340.00	34.45
Bicycle $F_w / F_v$	-3.64	1.83	-3.64	0.75	-3.64	0.63	-3.64	1.31



# HCS Signalized Intersection Results Graphical Summary

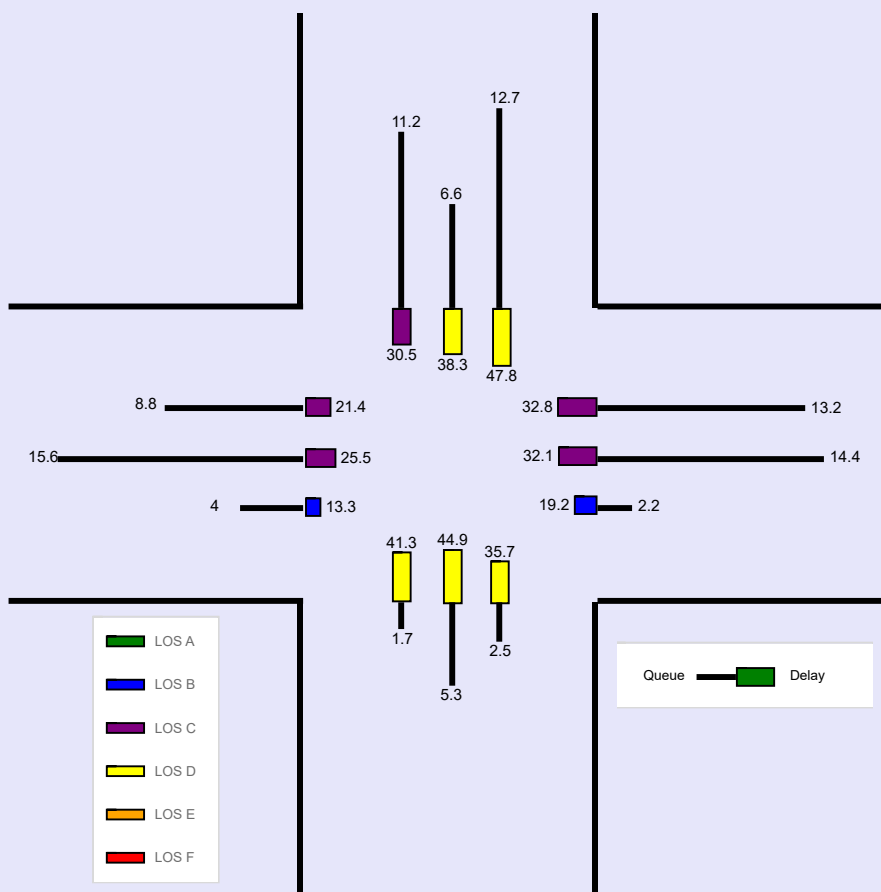
General Information				Intersection Information				
Agency	B&N			Duration, h	0.250			
Analyst	Sonja Summer		Analysis Date	Jan 16, 2024		Area Type	Other	
Jurisdiction				Time Period	PM Peak Hour		PHF	0.92
Urban Street	SR 39		Analysis Year	2050		Analysis Period	1 > 17:00	
Intersection	SR 39 & Bluebell Dr		File Name	Scenario4_Bluebell_PM.xus				
Project Description	Build Alternative 4							



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	350	500	170	80	510	250	180	110	60	280	150	300

Signal Information				Signal Phases									
Cycle, s	100.0	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	6.4	3.1	35.6	8.0	11.0	0.0			
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	4.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	2.0	2.0	0.0			

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Back of Queue ( Q ), ft/ln ( 95 th percentile)	223.4	395.8	102.2	54.9	365.3	330.6	42.7	134.5	63.1	319.6	167.4	281
Back of Queue ( Q ), veh/ln ( 95 th percentile)	8.8	15.6	4.0	2.2	14.4	13.2	1.7	5.3	2.5	12.7	6.6	11.2
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.19	0.34	0.34	0.27	0.69	0.63	0.21	0.07	0.16	0.91	0.33	0.56
Control Delay ( d ), s/veh	21.4	25.5	13.3	19.2	32.1	32.8	41.3	44.9	35.7	47.8	38.3	30.5
Level of Service ( LOS)	C	C	B	B	C	C	D	D	D	D	D	C
Approach Delay, s/veh / LOS	22.1	C		31.2	C		41.5	D		38.7	D	
Intersection Delay, s/veh / LOS	31.1						C					





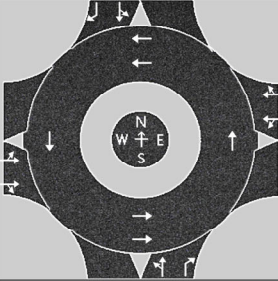


**--- Messages ---**

No errors or warnings exist.

**--- Comments ---**

# HCS Roundabouts Report

General Information				Site Information				
Analyst	Sonja Summer				Intersection	SR 39 & Bluebell		
Agency or Co.	B&N				E/W Street Name	SR 39		
Date Performed	11/28/2023				N/S Street Name	Bluebell Dr		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	AM Peak Hour				Peak Hour Factor	0.91		
Project Description	Build Alternative 5				Jurisdiction			

## Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	2	0	0	0	2	0	0	0	1	1	0	0	1	1
Lane Assignment	LT		TR		LT		TR		LT		R		LT		R	
Volume (V), veh/h	100	210	290	130	0	80	290	250	0	100	110	70	0	220	110	190
Percent Heavy Vehicles, %	4	4	4	4	2	2	2	2	2	2	2	2	2	2	2	2
Flow Rate (v <sub>PCE</sub> ), pc/h	114	240	331	149	0	90	325	280	0	112	123	78	0	247	123	213
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				2				2			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

## Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.5436	4.5436		4.5436	4.5436		4.6453	4.3276		4.6453	4.3276	
Follow-Up Headway, s	2.5352	2.5352		2.5352	2.5352		2.6667	2.5352		2.6667	2.5352	

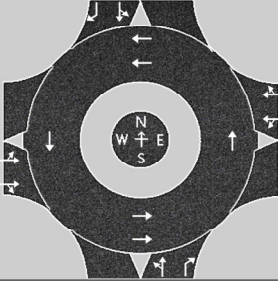
## Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	392	442		327	368		235	78		370	213	
Entry Volume, veh/h	377	425		320	361		230	76		363	209	
Circulating Flow (v <sub>c</sub> ), pc/h	460			589			932			641		
Exiting Flow (v <sub>ex</sub> ), pc/h	656			764			643			362		
Capacity (c <sub>PCE</sub> ), pc/h	934	934		831	831		573	643		749	824	
Capacity (c), veh/h	898	898		815	815		562	630		734	807	
v/c Ratio (x)	0.42	0.47		0.39	0.44		0.41	0.12		0.49	0.26	

## Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	9.0	9.9		9.2	10.1		12.9	7.1		12.1	7.3	
Lane LOS	A	A		A	B		B	A		B	A	
95% Queue, veh	2.1	2.6		1.9	2.3		2.0	0.4		2.8	1.0	
Approach Delay, s/veh   LOS	9.5		A	9.7		A	11.4		B	10.3		B
Intersection Delay, s/veh   LOS	10.0						A					

# HCS Roundabouts Report

General Information				Site Information				
Analyst	Sonja Summer				Intersection	SR 39 & Bluebell		
Agency or Co.	B&N				E/W Street Name	SR 39		
Date Performed	11/28/2023				N/S Street Name	Bluebell Dr		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	PM Peak Hour				Peak Hour Factor	0.92		
Project Description	Build Alternative 5				Jurisdiction			

## Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	2	0	0	0	2	0	0	0	1	1	0	0	1	1
Lane Assignment	LT		TR		LT		TR		LT		R		LT		R	
Volume (V), veh/h	100	250	500	170	0	80	510	250	0	180	110	60	0	280	150	300
Percent Heavy Vehicles, %	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1
Flow Rate (v <sub>PCE</sub> ), pc/h	111	277	554	188	0	89	565	277	0	198	121	66	0	307	165	329
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				2				2			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

## Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.5436	4.5436		4.5436	4.5436		4.6453	4.3276		4.6453	4.3276	
Follow-Up Headway, s	2.5352	2.5352		2.5352	2.5352		2.6667	2.5352		2.6667	2.5352	

## Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	531	599		438	493		319	66		472	329	
Entry Volume, veh/h	521	587		429	484		316	65		467	326	
Circulating Flow (v <sub>c</sub> ), pc/h	561			707			1249			963		
Exiting Flow (v <sub>ex</sub> ), pc/h	927			1203			675			442		
Capacity (c <sub>PCE</sub> ), pc/h	852	852		746	746		428	491		557	626	
Capacity (c), veh/h	836	836		732	732		424	486		551	620	
v/c Ratio (x)	0.62	0.70		0.59	0.66		0.75	0.13		0.85	0.53	

## Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	14.3	17.3		14.6	17.3		33.3	9.2		37.1	14.7	
Lane LOS	B	C		B	C		D	A		E	B	
95% Queue, veh	4.5	6.0		3.9	5.0		6.1	0.5		9.0	3.1	
Approach Delay, s/veh   LOS	15.9   C			16.0   C			29.1   D			27.9   D		
Intersection Delay, s/veh   LOS	20.5						C					

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Roundabout Level of Service - Overview

### STONECREEK NB, STONECREEK SB & RAMP -- ROUNDABOUT

NODE: 2

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
1	2,772.0	91.41	118.7	F
2	2,717.0	98.09	130.0	F
3	2,705.0	110.98	147.7	F
4	2,703.0	111.33	148.3	F
5	2,714.0	123.75	164.1	F
6	2,756.0	84.71	110.7	F
7	2,767.0	96.40	125.4	F
8	2,726.0	102.56	135.4	F
9	2,727.0	102.83	135.7	F
10	2,718.0	116.00	153.6	F
<b>Average:</b>	<b>2,730.5</b>	<b>103.81</b>	<b>137.0</b>	<b>F</b>

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Roundabout Level of Service - Total Control Delay

Node ID	Intersection	Control Type	Average	Std Dev	Minimum	Maximum	# Samples
2	Stonecreek NB, Stonecreek SB & RAMP	Roundabout	103.8	11.8	84.7	123.8	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Roundabout Level of Service - Avg Control Delay

Node ID	Intersection	Control Type	Average	Std Dev	Minimum	Maximum	# Samples
2	Stonecreek NB, Stonecreek SB & RAMP	Roundabout	137.0	16.6	110.7	164.1	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Roundabout Level of Service by Lane - Overview

## STONECREEK NB, STONECREEK SB & RAMP -- ROUNDABOUT

NODE: 2

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
<b>NEB T on Stonecreek: Lane ID 33625043</b>				
1	280.0	6.72	86.4	F
2	291.0	5.43	67.1	F
3	310.0	3.95	45.8	E
4	318.0	5.04	57.0	F
5	319.0	9.10	102.7	F
6	284.0	5.01	63.5	F
7	289.0	6.23	77.6	F
8	291.0	4.67	57.8	F
9	307.0	6.20	72.7	F
10	292.0	4.47	55.1	F
<b>Average:</b>	<b>298.0</b>	<b>5.68</b>	<b>68.6</b>	<b>F</b>

## NEB T on Stonecreek: Lane ID 33625044

1	460.0	5.69	44.6	E
2	441.0	4.61	37.7	E
3	413.0	3.28	28.6	D
4	411.0	3.87	33.9	D
5	420.0	8.52	73.0	F
6	457.0	4.15	32.7	D
7	444.0	5.57	45.1	E
8	439.0	3.95	32.4	D
9	422.0	5.42	46.2	E
10	443.0	3.32	27.0	D
<b>Average:</b>	<b>435.0</b>	<b>4.84</b>	<b>40.1</b>	<b>E</b>

## SB T on [Unnamed Street]: Lane ID 33625035

1	169.0	18.32	390.3	F
2	164.0	17.57	385.6	F
3	142.0	23.72	601.3	F
4	126.0	23.63	675.3	F
5	155.0	29.93	695.0	F
6	201.0	14.90	266.8	F
7	155.0	17.59	408.6	F
8	131.0	19.14	526.1	F
9	146.0	21.44	528.7	F
10	156.0	24.57	566.9	F
<b>Average:</b>	<b>154.0</b>	<b>21.08</b>	<b>504.5</b>	<b>F</b>

**STONECREEK NB, STONECREEK SB & RAMP -- ROUNDABOUT****NODE: 2**

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
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**SB T on [Unnamed Street]: Lane ID 33625036**

1	272.0	25.78	341.3	F
2	240.0	25.75	386.2	F
3	237.0	38.52	585.2	F
4	240.0	36.52	547.8	F
5	236.0	35.03	534.4	F
6	258.0	17.94	250.4	F
7	245.0	27.81	408.6	F
8	272.0	34.06	450.8	F
9	286.0	30.66	386.0	F
10	231.0	37.95	591.4	F
<b>Average:</b>	<b>251.0</b>	<b>31.00</b>	<b>448.2</b>	<b>F</b>

**SWB T on RAMP: Lane ID 33578451**

1	230.0	15.58	243.8	F
2	233.0	20.41	315.3	F
3	248.0	19.31	280.3	F
4	247.0	19.03	277.4	F
5	233.0	18.87	291.6	F
6	219.0	19.07	313.5	F
7	262.0	17.88	245.7	F
8	245.0	17.99	264.4	F
9	231.0	18.20	283.6	F
10	248.0	21.06	305.6	F
<b>Average:</b>	<b>239.0</b>	<b>18.74</b>	<b>282.1</b>	<b>F</b>

**SWB T on RAMP: Lane ID 33578452**

1	283.0	16.84	214.2	F
2	273.0	21.77	287.1	F
3	277.0	19.67	255.6	F
4	285.0	20.73	261.9	F
5	267.0	19.72	265.9	F
6	262.0	20.93	287.6	F
7	292.0	18.84	232.3	F
8	265.0	20.10	273.1	F
9	256.0	18.35	258.1	F
10	272.0	22.01	291.3	F
<b>Average:</b>	<b>273.0</b>	<b>19.90</b>	<b>262.7</b>	<b>F</b>

**WB T on STATE RT 39: Lane ID 33625039**

1	869.0	2.35	9.8	A
2	867.0	2.42	10.1	B



**STONECREEK NB, STONECREEK SB & RAMP -- ROUNDABOUT**

**NODE: 2**

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
3	866.0	2.42	10.1	B
4	867.0	2.41	10.0	A
5	874.0	2.45	10.1	B
6	868.0	2.57	10.7	B
7	868.0	2.35	9.8	A
8	869.0	2.54	10.5	B
9	870.0	2.42	10.0	B
10	866.0	2.50	10.4	B
<b>Average:</b>	<b>868.0</b>	<b>2.44</b>	<b>10.2</b>	<b>B</b>

**WB T on STATE RT 39: Lane ID 33625040**

1	209.0	0.12	2.0	A
2	208.0	0.13	2.2	A
3	212.0	0.11	1.9	A
4	209.0	0.10	1.8	A
5	210.0	0.13	2.2	A
6	207.0	0.13	2.2	A
7	212.0	0.12	2.0	A
8	214.0	0.11	1.9	A
9	209.0	0.13	2.2	A
10	210.0	0.13	2.1	A
<b>Average:</b>	<b>210.0</b>	<b>0.12</b>	<b>2.1</b>	<b>A</b>

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Roundabout Level of Service by Lane - Total Control Delay

### STONECREEK NB, STONECREEK SB & RAMP

NODE: 2

Lane	Lane ID	Street Name	Average	Std Dev	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	18.7	1.5	15.6	21.1	10
SWB T	33578452	RAMP	19.9	1.6	16.8	22.0	10
SB T	33625035	[Unnamed Street]	21.1	4.4	14.9	29.9	10
SB T	33625036	[Unnamed Street]	31.0	6.6	17.9	38.5	10
WB T	33625039	STATE RT 39	2.4	0.1	2.4	2.6	10
WB T	33625040	STATE RT 39	0.1	0.0	0.1	0.1	10
NEB T	33625043	Stonecreek	5.7	1.5	4.0	9.1	10
NEB T	33625044	Stonecreek	4.8	1.6	3.3	8.5	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Roundabout Level of Service by Lane - Avg Control Delay

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Lane	Lane ID	Street Name	Average	Std Dev	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	282.1	25.5	243.8	315.3	10
SWB T	33578452	RAMP	262.7	24.7	214.2	291.3	10
SB T	33625035	[Unnamed Street]	504.5	138.5	266.8	695.0	10
SB T	33625036	[Unnamed Street]	448.2	113.8	250.4	591.4	10
WB T	33625039	STATE RT 39	10.2	0.3	9.8	10.7	10
WB T	33625040	STATE RT 39	2.1	0.2	1.8	2.2	10
NEB T	33625043	Stonecreek	68.6	16.9	45.8	102.7	10
NEB T	33625044	Stonecreek	40.1	13.4	27.0	73.0	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Lane Queue by Intersection - Overview

## STONECREEK NB, STONECREEK SB & RAMP

NODE: 2

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>NEB T on Stonecreek - Lane ID 33625043</b>						
1	119.0	186.8	5.7	448.1	14.0	0.0%
2	119.0	149.9	4.8	396.7	13.1	0.0%
3	119.0	113.0	3.7	320.1	9.0	0.0%
4	119.0	134.8	4.1	345.0	10.1	0.0%
5	119.0	235.7	7.2	589.3	17.1	0.0%
6	119.0	137.5	4.3	349.4	12.0	0.0%
7	119.0	158.9	4.8	487.7	14.0	0.0%
8	119.0	128.6	4.1	301.0	10.0	0.0%
9	119.0	176.7	5.5	412.6	14.0	0.0%
10	119.0	115.3	3.6	293.7	10.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>153.7</b>	<b>4.8</b>	<b>394.4</b>	<b>12.3</b>	<b>0.0%</b>

## NEB T on Stonecreek - Lane ID 33625044

1	119.0	138.5	4.3	408.3	13.1	0.0%
2	119.0	109.3	3.1	350.2	9.1	0.0%
3	119.0	93.8	2.7	282.7	9.1	0.0%
4	119.0	98.8	2.8	365.4	9.0	0.0%
5	119.0	197.1	5.4	553.6	15.1	0.0%
6	119.0	101.1	3.2	339.4	11.0	0.0%
7	119.0	122.8	3.6	439.5	13.0	0.0%
8	119.0	92.9	2.8	297.9	9.1	0.0%
9	119.0	152.0	4.4	391.8	13.0	0.0%
10	119.0	70.2	2.1	245.5	7.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>117.7</b>	<b>3.4</b>	<b>367.4</b>	<b>10.9</b>	<b>0.0%</b>

## SB T on [Unnamed Street] - Lane ID 33625035

1	119.0	462.1	16.1	1,340.2	47.2	0.0%
2	119.0	532.5	18.2	1,834.9	65.1	0.0%
3	119.0	736.3	25.1	3,358.4	110.2	0.0%
4	119.0	566.1	18.5	2,940.3	94.2	0.0%
5	119.0	337.2	11.9	658.4	23.1	0.0%
6	119.0	306.2	11.1	665.9	22.6	0.0%
7	119.0	632.8	21.8	2,790.1	95.1	0.0%
8	119.0	545.8	18.9	1,937.2	67.6	0.0%
9	119.0	530.6	18.5	1,626.4	57.0	0.0%
10	119.0	438.7	15.1	2,895.4	92.7	0.0%

**STONECREEK NB, STONECREEK SB & RAMP****NODE: 2**

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>SB T on [Unnamed Street] - Lane ID 33625035</b>						
Average:	119.0	508.8	17.5	2,004.7	67.5	0.0%
<b>SB T on [Unnamed Street] - Lane ID 33625036</b>						
1	119.0	603.2	20.9	1,591.9	57.0	0.0%
2	119.0	818.7	26.7	2,398.3	75.0	0.0%
3	119.0	835.0	28.2	3,346.6	111.1	0.0%
4	119.0	913.9	31.0	3,372.3	112.2	0.0%
5	119.0	1,106.9	36.5	3,371.8	110.0	0.0%
6	119.0	507.9	17.0	1,482.3	48.1	0.0%
7	119.0	671.8	22.7	2,550.3	88.0	0.0%
8	119.0	887.4	29.8	3,356.9	111.1	0.0%
9	119.0	735.5	25.3	2,035.9	69.1	0.0%
10	119.0	969.6	32.2	3,367.4	113.0	0.0%
Average:	119.0	805.0	27.0	2,687.4	89.5	0.0%
<b>SWB T on RAMP - Lane ID 33578451</b>						
1	119.0	311.1	10.1	1,385.3	40.2	3.4%
2	119.0	390.9	12.9	1,832.5	58.0	5.9%
3	119.0	336.4	11.3	1,617.4	52.0	5.0%
4	119.0	345.7	11.4	1,380.9	40.7	3.4%
5	119.0	349.9	11.2	1,272.6	37.3	3.4%
6	119.0	361.9	11.6	1,835.7	55.0	5.9%
7	119.0	347.0	11.7	1,189.4	42.2	2.5%
8	119.0	296.4	9.1	659.9	21.4	1.7%
9	119.0	324.1	10.3	1,273.6	37.5	1.7%
10	119.0	388.9	13.2	1,503.3	49.1	0.8%
Average:	119.0	345.2	11.3	1,395.1	43.3	3.4%
<b>SWB T on RAMP - Lane ID 33578452</b>						
1	119.0	387.1	11.7	1,850.5	56.2	6.7%
2	119.0	499.4	15.9	1,863.7	59.1	11.8%
3	119.0	392.7	12.2	1,725.3	48.4	5.0%
4	119.0	355.0	10.7	1,622.8	47.2	4.2%
5	119.0	454.2	14.3	1,853.8	58.0	7.6%
6	119.0	463.2	14.3	1,860.0	53.0	6.7%
7	119.0	396.1	12.6	1,357.9	44.1	1.7%
8	119.0	546.1	16.9	1,863.7	56.0	10.1%
9	119.0	527.1	16.0	1,863.7	60.0	13.4%
10	119.0	457.1	14.4	1,846.7	58.2	6.7%
Average:	119.0	447.8	13.9	1,770.8	54.0	7.4%

**STONECREEK NB, STONECREEK SB & RAMP****NODE: 2**

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>WB T on STATE RT 39 - Lane ID 33625039</b>						
1	119.0	9.1	0.3	53.5	1.0	0.0%
2	119.0	9.4	0.3	76.3	2.0	0.0%
3	119.0	9.9	0.3	84.1	2.0	0.0%
4	119.0	9.4	0.3	78.9	3.0	0.0%
5	119.0	9.8	0.3	70.3	2.0	0.0%
6	119.0	7.0	0.3	47.9	1.1	0.0%
7	119.0	3.9	0.1	1.8	0.1	0.0%
8	119.0	6.7	0.2	30.4	1.1	0.0%
9	119.0	5.5	0.2	0.0	0.0	0.0%
10	119.0	8.7	0.3	52.1	2.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>7.9</b>	<b>0.3</b>	<b>49.5</b>	<b>1.4</b>	<b>0.0%</b>

**WB T on STATE RT 39 - Lane ID 33625040**

1	119.0	0.2	0.0	0.0	0.0	0.0%
2	119.0	0.5	0.0	0.0	0.0	0.0%
3	119.0	1.1	0.0	0.0	0.0	0.0%
4	119.0	1.3	0.0	0.0	0.0	0.0%
5	119.0	1.7	0.0	0.0	0.0	0.0%
6	119.0	0.1	0.0	0.0	0.0	0.0%
7	119.0	0.2	0.0	0.0	0.0	0.0%
8	119.0	0.1	0.0	0.0	0.0	0.0%
9	119.0	1.4	0.0	0.0	0.0	0.0%
10	119.0	0.5	0.0	0.0	0.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>0.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0%</b>

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Avg Queue

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	508.8	129.3	306.2	736.3	10
SB T	33625036	[Unnamed Street]	805.0	179.4	507.9	1,106.9	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	345.2	30.5	296.4	390.9	10
SWB T	33578452	RAMP	447.8	64.1	355.0	546.1	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	7.9	2.1	3.9	9.9	10
WB T	33625040	STATE RT 39	0.7	0.6	0.1	1.7	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	153.7	37.7	113.0	235.7	10
NEB T	33625044	Stonecreek	117.7	36.6	70.2	197.1	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Avg Num Queued

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	17.5	4.2	11.1	25.1	10
SB T	33625036	[Unnamed Street]	27.0	5.8	17.0	36.5	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	11.3	1.2	9.1	13.2	10
SWB T	33578452	RAMP	13.9	2.0	10.7	16.9	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	0.3	0.1	0.1	0.3	10
WB T	33625040	STATE RT 39	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	4.8	1.1	3.6	7.2	10
NEB T	33625044	Stonecreek	3.4	1.0	2.1	5.4	10



Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Percentile Queue

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	2,004.7	962.7	658.4	3,358.4	10
SB T	33625036	[Unnamed Street]	2,687.4	779.0	1,482.3	3,372.3	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	1,395.1	343.1	659.9	1,835.7	10
SWB T	33578452	RAMP	1,770.8	165.8	1,357.9	1,863.7	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	49.5	30.4	0.0	84.1	10
WB T	33625040	STATE RT 39	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	394.4	93.5	293.7	589.3	10
NEB T	33625044	Stonecreek	367.4	88.2	245.5	553.6	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Percentile Num Queued

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	67.5	30.6	22.6	110.2	10
SB T	33625036	[Unnamed Street]	89.5	25.4	48.1	113.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	43.3	10.7	21.4	58.0	10
SWB T	33578452	RAMP	54.0	5.6	44.1	60.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	1.4	0.9	0.0	3.0	10
WB T	33625040	STATE RT 39	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	12.3	2.6	9.0	17.1	10
NEB T	33625044	Stonecreek	10.9	2.6	7.0	15.1	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Spillback Rate

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	0.0	0.0	0.0	0.0	10
SB T	33625036	[Unnamed Street]	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	0.0	0.0	0.0	0.1	10
SWB T	33578452	RAMP	0.1	0.0	0.0	0.1	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	0.0	0.0	0.0	0.0	10
WB T	33625040	STATE RT 39	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	0.0	0.0	0.0	0.0	10
NEB T	33625044	Stonecreek	0.0	0.0	0.0	0.0	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Intersection Level of Service - Overview

### STATE RT 39, 720504701 & 720504700 -- SIGNALIZED

**NODE: 10**

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
1	2,881.0	14.85	18.6	B
2	2,850.0	15.55	19.6	B
3	2,842.0	14.12	17.9	B
4	2,851.0	13.57	17.1	B
5	2,853.0	15.03	19.0	B
6	2,860.0	14.62	18.4	B
7	2,889.0	16.74	20.9	C
8	2,852.0	20.14	25.4	C
9	2,856.0	14.53	18.3	B
10	2,865.0	15.37	19.3	B
<b>Average:</b>	<b>2,859.9</b>	<b>15.45</b>	<b>19.5</b>	<b>B</b>

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Intersection Level of Service - Total Control Delay

Node ID	Intersection	Control Type	Average	Std Dev	Minimum	Maximum	# Samples
10	STATE RT 39, 720504701 & 720504700	Actuated	15.5	1.9	13.6	20.1	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Intersection Level of Service - Avg Control Delay

Node ID	Intersection	Control Type	Average	Std Dev	Minimum	Maximum	# Samples
10	STATE RT 39, 720504701 & 720504700	Actuated	19.5	2.3	17.1	25.4	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Intersection Level of Service by Approach - Overview

## STATE RT 39, 720504701 & 720504700 -- SIGNALIZED

NODE: 10

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
<b>EB on STATE RT 39: Superlink ID 720504699</b>				
1	1,017.0	2.64	9.3	A
2	979.0	2.99	11.0	B
3	978.0	2.77	10.2	B
4	985.0	2.43	8.9	A
5	987.0	2.96	10.8	B
6	995.0	2.71	9.8	A
7	1,016.0	2.87	10.2	B
8	981.0	2.54	9.3	A
9	988.0	2.71	9.9	A
10	1,002.0	2.69	9.7	A
<b>Average:</b>	<b>992.8</b>	<b>2.73</b>	<b>9.9</b>	<b>A</b>

## NB on [Unnamed Street]: Superlink ID 720504701

1	646.0	5.47	30.5	C
2	651.0	5.19	28.7	C
3	646.0	5.25	29.3	C
4	647.0	5.14	28.6	C
5	648.0	5.02	27.9	C
6	648.0	5.46	30.3	C
7	654.0	5.39	29.7	C
8	644.0	5.43	30.4	C
9	647.0	5.24	29.2	C
10	646.0	5.27	29.4	C
<b>Average:</b>	<b>647.7</b>	<b>5.29</b>	<b>29.4</b>	<b>C</b>

## WB on STATE RT 39: Superlink ID 720496106

1	1,218.0	6.75	20.0	B
2	1,220.0	7.37	21.7	C
3	1,218.0	6.10	18.0	B
4	1,219.0	5.99	17.7	B
5	1,218.0	7.05	20.8	C
6	1,217.0	6.45	19.1	B
7	1,219.0	8.48	25.0	C
8	1,227.0	12.17	35.7	D
9	1,221.0	6.58	19.4	B

**STATE RT 39, 720504701 & 720504700 -- SIGNALIZED**

**NODE: 10**

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
10	1,217.0	7.40	21.9	C
<b>Average:</b>	<b>1,219.4</b>	<b>7.43</b>	<b>21.9</b>	<b>C</b>



Project: US 39 & Stonecreek RB  
Scenario: PM Peak  
Run(s): Batch (10 runs)  
Simulated: Various  
Time: 17:00:00 - 18:00:00  
Interval: Summary  
Selection: Instant Report

# Intersection Level of Service by Approach - Total Control Delay

**STATE RT 39, 720504701 & 720504700**

**NODE: 10**

Direction	Street Name	Superlink ID	Average	Std Dev	Minimum	Maximum	# Samples
E	STATE RT 39	720504699	2.7	0.2	2.4	3.0	10
N	[Unnamed Street]	720504701	5.3	0.1	5.0	5.5	10
W	STATE RT 39	720496106	7.4	1.8	6.0	12.2	10

Project: US 39 & Stonecreek RB  
Scenario: PM Peak  
Run(s): Batch (10 runs)  
Simulated: Various  
Time: 17:00:00 - 18:00:00  
Interval: Summary  
Selection: Instant Report

# Intersection Level of Service by Approach - Avg Control Delay

**STATE RT 39, 720504701 & 720504700**

**NODE: 10**

Direction	Street Name	Superlink ID	Average	Std Dev	Minimum	Maximum	# Samples
E	STATE RT 39	720504699	9.9	0.7	8.9	11.0	10
N	[Unnamed Street]	720504701	29.4	0.9	27.9	30.5	10
W	STATE RT 39	720496106	21.9	5.3	17.7	35.7	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Intersection Level of Service by Lane Group - Overview

## STATE RT 39, 720504701 & 720504700 -- SIGNALIZED

NODE: 10

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
<b>EB L on STATE RT 39: Superlink ID 720504699</b>				
1	135.0	1.33	35.5	D
2	128.0	1.37	38.7	D
3	120.0	1.12	33.5	C
4	122.0	1.11	32.7	C
5	129.0	1.49	41.5	D
6	133.0	1.34	36.2	D
7	127.0	1.26	35.7	D
8	128.0	1.29	36.3	D
9	131.0	1.39	38.1	D
10	126.0	1.24	35.3	D
<b>Average:</b>	<b>127.9</b>	<b>1.29</b>	<b>36.4</b>	<b>D</b>

## EB T on STATE RT 39: Superlink ID 720504699

1	882.0	1.30	5.3	A
2	851.0	1.62	6.9	A
3	858.0	1.65	6.9	A
4	863.0	1.32	5.5	A
5	858.0	1.47	6.2	A
6	862.0	1.37	5.7	A
7	889.0	1.61	6.5	A
8	853.0	1.25	5.3	A
9	857.0	1.32	5.5	A
10	876.0	1.45	6.0	A
<b>Average:</b>	<b>864.9</b>	<b>1.44</b>	<b>6.0</b>	<b>A</b>

## NB L on [Unnamed Street]: Superlink ID 720504701

1	147.0	1.59	38.9	D
2	151.0	1.74	41.6	D
3	151.0	1.70	40.5	D
4	145.0	1.44	35.8	D
5	154.0	1.56	36.4	D
6	144.0	1.53	38.2	D
7	143.0	1.47	37.1	D
8	148.0	1.67	40.6	D
9	146.0	1.49	36.7	D
10	155.0	1.55	35.9	D
<b>Average:</b>	<b>148.4</b>	<b>1.57</b>	<b>38.2</b>	<b>D</b>

**STATE RT 39, 720504701 & 720504700 -- SIGNALIZED**

**NODE: 10**

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
<b>NB LT on [Unnamed Street]: Superlink ID 720504701</b>				
1	131.0	1.28	35.1	D
2	128.0	1.24	35.0	C
3	128.0	1.28	35.9	D
4	135.0	1.28	34.2	C
5	131.0	1.22	33.6	C
6	135.0	1.18	31.5	C
7	138.0	1.27	33.1	C
8	130.0	1.30	36.1	D
9	132.0	1.24	33.9	C
10	126.0	1.14	32.6	C
<b>Average:</b>	<b>131.4</b>	<b>1.24</b>	<b>34.1</b>	<b>C</b>

**NB R on [Unnamed Street]: Superlink ID 720504701**

1	368.0	2.60	25.5	C
2	372.0	2.20	21.3	C
3	367.0	2.28	22.3	C
4	367.0	2.42	23.7	C
5	363.0	2.24	22.2	C
6	369.0	2.75	26.9	C
7	373.0	2.65	25.6	C
8	366.0	2.46	24.2	C
9	369.0	2.52	24.5	C
10	365.0	2.58	25.5	C
<b>Average:</b>	<b>367.9</b>	<b>2.47</b>	<b>24.2</b>	<b>C</b>

**WB T on STATE RT 39: Superlink ID 720496106**

1	557.0	3.00	19.4	B
2	564.0	3.24	20.7	C
3	554.0	2.69	17.5	B
4	552.0	2.76	18.0	B
5	563.0	3.31	21.2	C
6	542.0	3.04	20.2	C
7	576.0	3.70	23.1	C
8	552.0	8.26	53.9	D
9	563.0	2.90	18.5	B
10	558.0	3.29	21.2	C
<b>Average:</b>	<b>558.1</b>	<b>3.62</b>	<b>23.4</b>	<b>C</b>

**WB TR on STATE RT 39: Superlink ID 720496106**

1	661.0	3.75	20.4	C
2	656.0	4.13	22.7	C

**STATE RT 39, 720504701 & 720504700 -- SIGNALIZED**

**NODE: 10**

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
3	664.0	3.41	18.5	B
4	667.0	3.24	17.5	B
5	655.0	3.74	20.6	C
6	675.0	3.41	18.2	B
7	643.0	4.78	26.8	C
8	675.0	3.91	20.9	C
9	658.0	3.68	20.1	C
10	659.0	4.11	22.5	C
<b>Average:</b>	<b>661.3</b>	<b>3.82</b>	<b>20.8</b>	<b>C</b>

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Intersection Level of Service by Lane Group - Total Control Delay

### STATE RT 39, 720504701 & 720504700

NODE: 10

Lane Group	Street Name	Superlink ID	Average	Std Dev	Minimum	Maximum	# Samples
EB L	STATE RT 39	720504699	1.3	0.1	1.1	1.5	10
EB T	STATE RT 39	720504699	1.4	0.1	1.3	1.7	10
NB L	[Unnamed Street]	720504701	1.6	0.1	1.4	1.7	10
NB LT	[Unnamed Street]	720504701	1.2	0.1	1.1	1.3	10
NB R	[Unnamed Street]	720504701	2.5	0.2	2.2	2.8	10
WB T	STATE RT 39	720496106	3.6	1.7	2.7	8.3	10
WB TR	STATE RT 39	720496106	3.8	0.4	3.2	4.8	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Intersection Level of Service by Lane Group - Avg Control Delay

## STATE RT 39, 720504701 & 720504700

**NODE: 10**

Lane Group	Street Name	Superlink ID	Average	Std Dev	Minimum	Maximum	# Samples
EB L	STATE RT 39	720504699	36.4	2.6	32.7	41.5	10
EB T	STATE RT 39	720504699	6.0	0.6	5.3	6.9	10
NB L	[Unnamed Street]	720504701	38.2	2.1	35.8	41.6	10
NB LT	[Unnamed Street]	720504701	34.1	1.5	31.5	36.1	10
NB R	[Unnamed Street]	720504701	24.2	1.8	21.3	26.9	10
WB T	STATE RT 39	720496106	23.4	10.9	17.5	53.9	10
WB TR	STATE RT 39	720496106	20.8	2.7	17.5	26.8	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Lane Queue by Intersection - Overview

## STATE RT 39, 720504701 & 720504700

NODE: 10

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>EB L on STATE RT 39 - Lane ID 33625097</b>						
1	119.0	31.7	1.2	104.0	4.0	0.0%
2	119.0	29.6	1.1	126.8	5.0	0.0%
3	119.0	26.0	1.1	106.1	3.1	0.0%
4	119.0	25.6	1.0	105.6	3.0	0.0%
5	119.0	35.9	1.4	118.5	5.0	0.0%
6	119.0	29.1	1.2	100.3	4.0	0.0%
7	119.0	30.7	1.2	106.6	3.0	0.0%
8	119.0	32.8	1.2	120.0	4.0	0.0%
9	119.0	31.5	1.3	124.7	4.0	0.0%
10	119.0	25.8	1.1	75.2	3.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>29.9</b>	<b>1.2</b>	<b>108.8</b>	<b>3.8</b>	<b>0.0%</b>

## EB T on STATE RT 39 - Lane ID 33625077

1	119.0	7.9	0.5	57.8	3.0	0.0%
2	119.0	10.6	0.6	74.6	4.0	0.0%
3	119.0	15.3	0.8	118.4	6.0	0.0%
4	119.0	9.0	0.5	63.8	3.1	0.0%
5	119.0	11.3	0.7	60.7	3.1	0.0%
6	119.0	12.4	0.7	86.7	4.1	0.0%
7	119.0	13.2	0.7	74.9	4.0	0.0%
8	119.0	10.4	0.6	92.1	4.1	0.0%
9	119.0	9.7	0.6	91.0	3.1	0.0%
10	119.0	11.5	0.7	90.8	4.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>11.1</b>	<b>0.6</b>	<b>81.1</b>	<b>3.9</b>	<b>0.0%</b>

## EB T on STATE RT 39 - Lane ID 33625078

1	119.0	8.8	0.7	65.2	4.0	0.0%
2	119.0	9.1	0.6	57.1	4.0	0.0%
3	119.0	8.9	0.7	58.9	4.0	0.0%
4	119.0	6.9	0.5	46.4	3.1	0.0%
5	119.0	7.8	0.6	53.1	4.0	0.0%
6	119.0	6.2	0.6	40.6	3.0	0.0%
7	119.0	8.7	0.5	62.7	3.1	0.0%
8	119.0	8.0	0.6	62.1	4.0	0.0%
9	119.0	8.3	0.7	59.3	4.0	0.0%
10	119.0	7.8	0.6	62.9	3.1	0.0%



## STATE RT 39, 720504701 &amp; 720504700

NODE: 10

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>EB T on STATE RT 39 - Lane ID 33625078</b>						
Average:	119.0	8.1	0.6	56.8	3.6	0.0%
<b>NB L on [Unnamed Street] - Lane ID 33625086</b>						
1	119.0	41.9	1.4	150.6	4.0	0.0%
2	119.0	52.5	1.6	181.0	4.0	0.0%
3	119.0	47.7	1.6	155.5	4.0	0.0%
4	119.0	38.4	1.2	133.5	4.0	0.0%
5	119.0	46.1	1.4	176.6	4.0	0.0%
6	119.0	40.4	1.4	135.0	4.0	0.0%
7	119.0	46.2	1.4	153.7	4.0	0.0%
8	119.0	49.7	1.5	174.3	4.0	0.0%
9	119.0	46.1	1.4	148.9	4.0	0.0%
10	119.0	44.0	1.4	156.2	4.0	0.0%
Average:	119.0	45.3	1.4	156.5	4.0	0.0%
<b>NB LT on [Unnamed Street] - Lane ID 33625087</b>						
1	119.0	33.6	1.2	107.8	3.1	0.0%
2	119.0	30.9	1.1	128.1	4.0	0.0%
3	119.0	30.7	1.2	102.3	3.1	0.0%
4	119.0	32.5	1.2	122.2	4.0	0.0%
5	119.0	34.8	1.2	114.4	3.1	0.0%
6	119.0	30.6	1.1	104.7	3.0	0.0%
7	119.0	38.8	1.3	140.6	4.0	0.0%
8	119.0	33.8	1.3	115.6	4.0	0.0%
9	119.0	33.2	1.2	112.2	4.0	0.0%
10	119.0	32.8	1.1	137.9	3.0	0.0%
Average:	119.0	33.2	1.2	118.6	3.5	0.0%
<b>NB R on [Unnamed Street] - Lane ID 33625088</b>						
1	119.0	53.6	1.8	189.5	6.1	0.0%
2	119.0	48.4	1.6	195.0	6.0	0.0%
3	119.0	47.3	1.7	151.2	6.0	0.0%
4	119.0	51.3	1.7	162.0	6.0	0.0%
5	119.0	58.6	2.0	230.4	7.0	0.0%
6	119.0	63.6	2.3	217.8	7.0	0.0%
7	119.0	54.5	1.9	195.4	6.0	0.0%
8	119.0	53.0	1.8	204.9	6.0	0.0%
9	119.0	52.1	1.9	178.6	6.0	0.0%
10	119.0	68.4	2.3	223.2	7.0	0.0%
Average:	119.0	55.1	1.9	194.8	6.3	0.0%

**STATE RT 39, 720504701 & 720504700****NODE: 10**

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>WB T on STATE RT 39 - Lane ID 33578448</b>						
1	119.0	62.4	2.4	242.4	8.1	0.0%
2	119.0	79.5	2.9	332.0	11.1	0.0%
3	119.0	56.5	2.1	207.6	7.0	0.0%
4	119.0	64.2	2.4	235.4	8.0	0.0%
5	119.0	57.4	2.2	234.5	9.0	0.0%
6	119.0	59.3	2.2	232.8	8.1	0.0%
7	119.0	73.6	2.8	288.7	11.0	0.0%
8	119.0	79.0	2.8	390.1	14.1	0.0%
9	119.0	71.5	2.6	239.2	9.0	0.0%
10	119.0	76.7	2.8	295.9	10.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>68.0</b>	<b>2.5</b>	<b>269.9</b>	<b>9.5</b>	<b>0.0%</b>

**WB TR on STATE RT 39 - Lane ID 33578449**

1	119.0	68.8	2.6	253.5	10.0	0.0%
2	119.0	92.9	3.3	356.7	12.1	0.0%
3	119.0	59.8	2.2	239.9	8.2	0.0%
4	119.0	64.5	2.4	258.4	9.1	0.0%
5	119.0	67.8	2.4	300.6	9.0	0.0%
6	119.0	58.6	2.1	225.0	8.0	0.0%
7	119.0	90.6	3.1	365.8	11.1	0.0%
8	119.0	76.1	2.8	296.7	10.0	0.0%
9	119.0	72.5	2.7	273.2	9.0	0.0%
10	119.0	84.9	3.1	371.9	13.1	0.0%
<b>Average:</b>	<b>119.0</b>	<b>73.7</b>	<b>2.7</b>	<b>294.2</b>	<b>10.0</b>	<b>0.0%</b>

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Avg Queue

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB L	33625086	[Unnamed Street]	45.3	4.3	38.4	52.5	10
NB LT	33625087	[Unnamed Street]	33.2	2.4	30.6	38.8	10
NB R	33625088	[Unnamed Street]	55.1	6.6	47.3	68.4	10

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	68.0	9.1	56.5	79.5	10
WB TR	33578449	STATE RT 39	73.7	12.3	58.6	92.9	10
EB T	33625077	STATE RT 39	11.1	2.1	7.9	15.3	10
EB T	33625078	STATE RT 39	8.1	0.9	6.2	9.1	10
EB L	33625097	STATE RT 39	29.9	3.4	25.6	35.9	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Avg Num Queued

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB L	33625086	[Unnamed Street]	1.4	0.1	1.2	1.6	10
NB LT	33625087	[Unnamed Street]	1.2	0.1	1.1	1.3	10
NB R	33625088	[Unnamed Street]	1.9	0.2	1.6	2.3	10

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	2.5	0.3	2.1	2.9	10
WB TR	33578449	STATE RT 39	2.7	0.4	2.1	3.3	10
EB T	33625077	STATE RT 39	0.6	0.1	0.5	0.8	10
EB T	33625078	STATE RT 39	0.6	0.1	0.5	0.7	10
EB L	33625097	STATE RT 39	1.2	0.1	1.0	1.4	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Percentile Queue

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB L	33625086	[Unnamed Street]	156.5	16.4	133.5	181.0	10
NB LT	33625087	[Unnamed Street]	118.6	13.3	102.3	140.6	10
NB R	33625088	[Unnamed Street]	194.8	25.8	151.2	230.4	10

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	269.9	56.5	207.6	390.1	10
WB TR	33578449	STATE RT 39	294.2	54.0	225.0	371.9	10
EB T	33625077	STATE RT 39	81.1	18.5	57.8	118.4	10
EB T	33625078	STATE RT 39	56.8	7.9	40.6	65.2	10
EB L	33625097	STATE RT 39	108.8	15.1	75.2	126.8	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Percentile Num Queued

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB L	33625086	[Unnamed Street]	4.0	0.0	4.0	4.0	10
NB LT	33625087	[Unnamed Street]	3.5	0.5	3.0	4.0	10
NB R	33625088	[Unnamed Street]	6.3	0.5	6.0	7.0	10

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	9.5	2.1	7.0	14.1	10
WB TR	33578449	STATE RT 39	10.0	1.7	8.0	13.1	10
EB T	33625077	STATE RT 39	3.9	0.9	3.0	6.0	10
EB T	33625078	STATE RT 39	3.6	0.5	3.0	4.0	10
EB L	33625097	STATE RT 39	3.8	0.8	3.0	5.0	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Spillback Rate

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB L	33625086	[Unnamed Street]	0.0	0.0	0.0	0.0	10
NB LT	33625087	[Unnamed Street]	0.0	0.0	0.0	0.0	10
NB R	33625088	[Unnamed Street]	0.0	0.0	0.0	0.0	10

### STATE RT 39, 720504701 & 720504700

**NODE: 10**

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	0.0	0.0	0.0	0.0	10
WB TR	33578449	STATE RT 39	0.0	0.0	0.0	0.0	10
EB T	33625077	STATE RT 39	0.0	0.0	0.0	0.0	10
EB T	33625078	STATE RT 39	0.0	0.0	0.0	0.0	10
EB L	33625097	STATE RT 39	0.0	0.0	0.0	0.0	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Roundabout Level of Service - Overview

### STONECREEK NB, STONECREEK SB & RAMP -- ROUNDABOUT

NODE: 2

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
1	2,581.0	5.59	7.8	A
2	2,583.0	6.93	9.7	A
3	2,585.0	5.29	7.4	A
4	2,582.0	5.57	7.8	A
5	2,590.0	6.11	8.5	A
6	2,586.0	5.44	7.6	A
7	2,585.0	5.63	7.8	A
8	2,584.0	6.19	8.6	A
9	2,582.0	8.51	11.9	B
10	2,577.0	5.62	7.8	A
<b>Average:</b>	<b>2,583.5</b>	<b>6.09</b>	<b>8.5</b>	<b>A</b>



Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Roundabout Level of Service - Total Control Delay

Node ID	Intersection	Control Type	Average	Std Dev	Minimum	Maximum	# Samples
2	Stonecreek NB, Stonecreek SB & RAMP	Roundabout	6.1	1.0	5.3	8.5	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Roundabout Level of Service - Avg Control Delay

Node ID	Intersection	Control Type	Average	Std Dev	Minimum	Maximum	# Samples
2	Stonecreek NB, Stonecreek SB & RAMP	Roundabout	8.5	1.4	7.4	11.9	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Lane Queue by Intersection - Overview

## STONECREEK NB, STONECREEK SB & RAMP

NODE: 2

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>NEB T on Stonecreek - Lane ID 33625043</b>						
1	119.0	25.1	0.9	103.6	4.0	0.0%
2	119.0	25.1	0.8	134.4	4.0	0.0%
3	119.0	23.5	0.8	100.0	4.0	0.0%
4	119.0	28.6	1.0	116.8	4.0	0.0%
5	119.0	21.0	0.7	79.3	3.0	0.0%
6	119.0	17.3	0.7	86.3	3.0	0.0%
7	119.0	25.4	0.9	104.7	4.0	0.0%
8	119.0	29.4	1.0	141.5	3.1	0.0%
9	119.0	24.4	0.9	101.4	3.0	0.0%
10	119.0	27.1	0.8	106.5	3.1	0.0%
<b>Average:</b>	<b>119.0</b>	<b>24.7</b>	<b>0.9</b>	<b>107.5</b>	<b>3.5</b>	<b>0.0%</b>

## NEB T on Stonecreek - Lane ID 33625044

1	119.0	13.3	0.5	83.9	2.1	0.0%
2	119.0	10.1	0.4	71.9	2.0	0.0%
3	119.0	17.8	0.6	98.4	3.0	0.0%
4	119.0	12.3	0.4	75.5	2.0	0.0%
5	119.0	11.2	0.4	69.4	2.1	0.0%
6	119.0	11.1	0.4	72.8	2.0	0.0%
7	119.0	15.0	0.5	99.5	3.0	0.0%
8	119.0	8.6	0.3	46.4	2.0	0.0%
9	119.0	9.2	0.4	52.7	2.0	0.0%
10	119.0	8.5	0.4	45.3	2.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>11.7</b>	<b>0.4</b>	<b>71.6</b>	<b>2.2</b>	<b>0.0%</b>

## SB T on [Unnamed Street] - Lane ID 33625035

1	119.0	16.2	0.7	79.2	2.1	0.0%
2	119.0	24.8	0.9	95.8	3.0	0.0%
3	119.0	14.2	0.6	60.4	2.0	0.0%
4	119.0	14.0	0.7	52.8	2.1	0.0%
5	119.0	16.4	0.6	74.3	2.1	0.0%
6	119.0	12.3	0.5	60.5	2.0	0.0%
7	119.0	15.3	0.7	73.2	2.0	0.0%
8	119.0	22.5	0.8	126.4	3.0	0.0%
9	119.0	44.2	1.4	249.7	7.1	0.0%
10	119.0	13.5	0.6	71.6	3.0	0.0%

**STONECREEK NB, STONECREEK SB & RAMP****NODE: 2**

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>SB T on [Unnamed Street] - Lane ID 33625035</b>						
<b>Average:</b>	<b>119.0</b>	<b>19.3</b>	<b>0.8</b>	<b>94.4</b>	<b>2.8</b>	<b>0.0%</b>
<b>SB T on [Unnamed Street] - Lane ID 33625036</b>						
1	119.0	26.2	1.0	110.3	4.0	0.0%
2	119.0	42.4	1.6	211.4	7.0	0.0%
3	119.0	23.2	0.9	100.5	4.0	0.0%
4	119.0	19.7	0.9	75.5	3.0	0.0%
5	119.0	42.5	1.3	194.8	6.0	0.0%
6	119.0	22.7	0.9	97.7	3.0	0.0%
7	119.0	25.5	0.9	106.1	3.0	0.0%
8	119.0	34.6	1.2	160.8	4.0	0.0%
9	119.0	84.9	2.7	327.5	10.0	0.0%
10	119.0	28.0	1.1	106.9	4.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>35.0</b>	<b>1.3</b>	<b>149.2</b>	<b>4.8</b>	<b>0.0%</b>
<b>SWB T on RAMP - Lane ID 33578451</b>						
1	119.0	12.5	0.5	63.4	2.0	0.0%
2	119.0	18.2	0.7	97.1	3.0	0.0%
3	119.0	12.4	0.6	46.9	2.0	0.0%
4	119.0	13.3	0.6	66.1	2.1	0.0%
5	119.0	11.8	0.6	51.8	2.0	0.0%
6	119.0	12.0	0.5	53.0	2.0	0.0%
7	119.0	11.8	0.5	53.1	2.0	0.0%
8	119.0	10.3	0.5	45.4	2.0	0.0%
9	119.0	9.0	0.5	42.7	2.0	0.0%
10	119.0	12.0	0.5	54.5	2.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>12.3</b>	<b>0.6</b>	<b>57.4</b>	<b>2.1</b>	<b>0.0%</b>
<b>SWB T on RAMP - Lane ID 33578452</b>						
1	119.0	15.6	0.6	75.6	3.0	0.0%
2	119.0	19.9	0.7	100.5	3.1	0.0%
3	119.0	15.7	0.6	71.4	2.1	0.0%
4	119.0	14.4	0.6	92.0	3.0	0.0%
5	119.0	18.3	0.7	75.8	3.0	0.0%
6	119.0	15.3	0.6	76.6	3.0	0.0%
7	119.0	20.4	0.8	84.6	3.0	0.0%
8	119.0	15.9	0.7	91.9	3.0	0.0%
9	119.0	20.4	0.7	108.3	3.0	0.0%
10	119.0	14.1	0.6	76.8	2.1	0.0%
<b>Average:</b>	<b>119.0</b>	<b>17.0</b>	<b>0.7</b>	<b>85.4</b>	<b>2.8</b>	<b>0.0%</b>

**STONECREEK NB, STONECREEK SB & RAMP****NODE: 2**

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>WB T on STATE RT 39 - Lane ID 33625039</b>						
1	119.0	1.1	0.1	0.0	0.0	0.0%
2	119.0	1.6	0.1	1.6	0.1	0.0%
3	119.0	2.2	0.1	17.8	1.0	0.0%
4	119.0	0.4	0.0	0.0	0.0	0.0%
5	119.0	1.4	0.1	1.6	0.1	0.0%
6	119.0	1.9	0.1	13.3	1.0	0.0%
7	119.0	1.6	0.1	16.8	1.0	0.0%
8	119.0	2.9	0.1	17.0	1.0	0.0%
9	119.0	2.2	0.1	1.3	0.1	0.0%
10	119.0	2.4	0.1	15.2	1.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>1.8</b>	<b>0.1</b>	<b>8.5</b>	<b>0.5</b>	<b>0.0%</b>

**WB T on STATE RT 39 - Lane ID 33625040**

1	119.0	0.9	0.0	0.0	0.0	0.0%
2	119.0	0.6	0.0	0.0	0.0	0.0%
3	119.0	0.3	0.0	0.0	0.0	0.0%
4	119.0	1.4	0.0	0.0	0.0	0.0%
5	119.0	0.0	0.0	0.0	0.0	0.0%
6	119.0	0.5	0.0	0.0	0.0	0.0%
7	119.0	0.1	0.0	0.0	0.0	0.0%
8	119.0	1.0	0.0	0.0	0.0	0.0%
9	119.0	0.4	0.0	0.0	0.0	0.0%
10	119.0	0.0	0.0	0.0	0.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0%</b>

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Avg Queue

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	19.3	9.6	12.3	44.2	10
SB T	33625036	[Unnamed Street]	35.0	19.3	19.7	84.9	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	12.3	2.4	9.0	18.2	10
SWB T	33578452	RAMP	17.0	2.5	14.1	20.4	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	1.8	0.7	0.4	2.9	10
WB T	33625040	STATE RT 39	0.5	0.5	0.0	1.4	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	24.7	3.6	17.3	29.4	10
NEB T	33625044	Stonecreek	11.7	3.0	8.5	17.8	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Avg Num Queued

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	0.8	0.3	0.5	1.4	10
SB T	33625036	[Unnamed Street]	1.3	0.6	0.9	2.7	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	0.6	0.1	0.5	0.7	10
SWB T	33578452	RAMP	0.7	0.1	0.6	0.8	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	0.1	0.0	0.0	0.1	10
WB T	33625040	STATE RT 39	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	0.9	0.1	0.7	1.0	10
NEB T	33625044	Stonecreek	0.4	0.1	0.3	0.6	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Percentile Queue

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	94.4	58.5	52.8	249.7	10
SB T	33625036	[Unnamed Street]	149.2	77.1	75.5	327.5	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	57.4	15.8	42.7	97.1	10
SWB T	33578452	RAMP	85.4	12.4	71.4	108.3	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	8.5	8.1	0.0	17.8	10
WB T	33625040	STATE RT 39	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	107.5	19.2	79.3	141.5	10
NEB T	33625044	Stonecreek	71.6	19.3	45.3	99.5	10



Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Percentile Num Queued

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	2.8	1.6	2.0	7.1	10
SB T	33625036	[Unnamed Street]	4.8	2.3	3.0	10.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	2.1	0.3	2.0	3.0	10
SWB T	33578452	RAMP	2.8	0.4	2.1	3.1	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	0.5	0.5	0.0	1.0	10
WB T	33625040	STATE RT 39	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	3.5	0.5	3.0	4.0	10
NEB T	33625044	Stonecreek	2.2	0.4	2.0	3.0	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Spillback Rate

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SB T	33625035	[Unnamed Street]	0.0	0.0	0.0	0.0	10
SB T	33625036	[Unnamed Street]	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
SWB T	33578451	RAMP	0.0	0.0	0.0	0.0	10
SWB T	33578452	RAMP	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33625039	STATE RT 39	0.0	0.0	0.0	0.0	10
WB T	33625040	STATE RT 39	0.0	0.0	0.0	0.0	10

### STONECREEK NB, STONECREEK SB & RAMP

**NODE: 2**

Movement	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NEB T	33625043	Stonecreek	0.0	0.0	0.0	0.0	10
NEB T	33625044	Stonecreek	0.0	0.0	0.0	0.0	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Intersection Level of Service - Overview

**STATE RT 39, 720504701, 720504700 & 720504703 -- SIGNALIZED** **NODE: 720409962**

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
1	2,981.0	26.87	32.5	C
2	2,974.0	25.37	30.7	C
3	2,990.0	26.35	31.7	C
4	2,981.0	25.51	30.8	C
5	2,979.0	25.76	31.1	C
6	2,979.0	25.15	30.4	C
7	2,984.0	25.77	31.1	C
8	2,983.0	25.36	30.6	C
9	2,976.0	25.56	30.9	C
10	2,971.0	25.96	31.5	C
<b>Average:</b>	<b>2,979.8</b>	<b>25.77</b>	<b>31.1</b>	<b>C</b>

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Intersection Level of Service - Total Control Delay

Node ID	Intersection	Control Type	Average	Std Dev	Minimum	Maximum	# Samples
720409962	STATE RT 39, 720504701, 720504700 & 720504703	Actuated	25.8	0.5	25.2	26.9	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Intersection Level of Service - Avg Control Delay

Node ID	Intersection	Control Type	Average	Std Dev	Minimum	Maximum	# Samples
720409962	STATE RT 39, 720504701, 720504700 & 720504703	Actuated	31.1	0.6	30.4	32.5	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Intersection Level of Service by Approach - Overview

## STATE RT 39, 720504701, 720504700 & 720504703 -- SIGNALIZED

NODE: 720409962

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
<b>EB on STATE RT 39: Superlink ID 720504699</b>				
1	1,100.0	9.04	29.6	C
2	1,094.0	9.52	31.3	C
3	1,103.0	8.55	27.9	C
4	1,101.0	8.70	28.4	C
5	1,098.0	7.99	26.2	C
6	1,097.0	8.98	29.5	C
7	1,101.0	9.32	30.5	C
8	1,095.0	9.61	31.6	C
9	1,096.0	9.37	30.8	C
10	1,098.0	9.08	29.8	C
<b>Average:</b>	<b>1,098.3</b>	<b>9.02</b>	<b>29.6</b>	<b>C</b>

## NB on [Unnamed Street]: Superlink ID 720504701

1	646.0	8.19	45.6	D
2	645.0	6.73	37.6	D
3	652.0	8.31	45.9	D
4	646.0	7.31	40.7	D
5	648.0	8.12	45.1	D
6	648.0	6.91	38.4	D
7	650.0	7.43	41.2	D
8	651.0	6.99	38.6	D
9	646.0	6.86	38.3	D
10	642.0	7.68	43.1	D
<b>Average:</b>	<b>647.4</b>	<b>7.45</b>	<b>41.5</b>	<b>D</b>

## WB on STATE RT 39: Superlink ID 720496106

1	1,235.0	9.65	28.1	C
2	1,235.0	9.12	26.6	C
3	1,235.0	9.49	27.7	C
4	1,234.0	9.50	27.7	C
5	1,233.0	9.65	28.2	C
6	1,234.0	9.26	27.0	C
7	1,233.0	9.02	26.3	C
8	1,237.0	8.77	25.5	C
9	1,234.0	9.33	27.2	C

**STATE RT 39, 720504701, 720504700 & 720504703 -- SIGNALIZED** **NODE: 720409962**

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
10	1,231.0	9.20	26.9	C
<b>Average:</b>	<b>1,234.1</b>	<b>9.30</b>	<b>27.1</b>	<b>C</b>

Project: US 39 & Stonecreek RB  
Scenario: PM Peak  
Run(s): Batch (10 runs)  
Simulated: Various  
Time: 17:00:00 - 18:00:00  
Interval: Summary  
Selection: Instant Report

# Intersection Level of Service by Approach - Total Control Delay

**STATE RT 39, 720504701, 720504700 & 720504703**

**NODE: 720409962**

Direction	Street Name	Superlink ID	Average	Std Dev	Minimum	Maximum	# Samples
E	STATE RT 39	720504699	9.0	0.5	8.0	9.6	10
N	[Unnamed Street]	720504701	7.5	0.6	6.7	8.3	10
W	STATE RT 39	720496106	9.3	0.3	8.8	9.7	10



Project: US 39 & Stonecreek RB  
Scenario: PM Peak  
Run(s): Batch (10 runs)  
Simulated: Various  
Time: 17:00:00 - 18:00:00  
Interval: Summary  
Selection: Instant Report

# Intersection Level of Service by Approach - Avg Control Delay

**STATE RT 39, 720504701, 720504700 & 720504703**

**NODE: 720409962**

Direction	Street Name	Superlink ID	Average	Std Dev	Minimum	Maximum	# Samples
E	STATE RT 39	720504699	29.6	1.7	26.2	31.6	10
N	[Unnamed Street]	720504701	41.5	3.3	37.6	45.9	10
W	STATE RT 39	720496106	27.1	0.8	25.5	28.2	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Intersection Level of Service by Lane Group - Overview

## STATE RT 39, 720504701, 720504700 & 720504703 -- SIGNALIZED

NODE: 720409962

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
<b>EB L on STATE RT 39: Superlink ID 720504699</b>				
1	139.0	2.49	64.5	E
2	138.0	2.48	64.6	E
3	140.0	2.00	51.3	D
4	140.0	2.28	58.7	E
5	139.0	1.94	50.4	D
6	136.0	1.68	44.5	D
7	140.0	2.78	71.4	E
8	140.0	2.55	65.7	E
9	138.0	2.29	59.8	E
10	139.0	2.28	59.1	E
<b>Average:</b>	<b>138.9</b>	<b>2.28</b>	<b>59.0</b>	<b>E</b>

## EB T on STATE RT 39: Superlink ID 720504699

1	961.0	6.55	24.5	C
2	956.0	7.04	26.5	C
3	963.0	6.56	24.5	C
4	961.0	6.41	24.0	C
5	959.0	6.04	22.7	C
6	961.0	7.30	27.3	C
7	961.0	6.54	24.5	C
8	955.0	7.05	26.6	C
9	958.0	7.07	26.6	C
10	959.0	6.80	25.5	C
<b>Average:</b>	<b>959.4</b>	<b>6.74</b>	<b>25.3</b>	<b>C</b>

## NB LT on [Unnamed Street]: Superlink ID 720504701

1	279.0	5.33	68.7	E
2	273.0	4.10	54.0	D
3	282.0	5.32	68.0	E
4	276.0	4.38	57.1	E
5	278.0	5.10	66.0	E
6	276.0	4.07	53.2	D
7	280.0	4.48	57.6	E
8	281.0	4.33	55.4	E
9	276.0	4.27	55.7	E
10	274.0	5.01	65.9	E
<b>Average:</b>	<b>277.5</b>	<b>4.64</b>	<b>60.2</b>	<b>E</b>

**STATE RT 39, 720504701, 720504700 & 720504703 -- SIGNALIZED**

**NODE: 720409962**

Run	Number of Vehicles	Total Control Delay (hr)	Avg Control Delay (sec/veh)	Level of Service
<b>NB R on [Unnamed Street]: Superlink ID 720504701</b>				
1	367.0	2.86	28.1	C
2	372.0	2.64	25.5	C
3	370.0	2.98	29.0	C
4	370.0	2.93	28.5	C
5	370.0	3.02	29.4	C
6	372.0	2.83	27.4	C
7	370.0	2.95	28.7	C
8	370.0	2.66	25.9	C
9	370.0	2.59	25.2	C
10	368.0	2.66	26.1	C
<b>Average:</b>	<b>369.9</b>	<b>2.81</b>	<b>27.4</b>	<b>C</b>

**WB T on STATE RT 39: Superlink ID 720496106**

1	1,235.0	9.65	28.1	C
2	1,235.0	9.12	26.6	C
3	1,235.0	9.49	27.7	C
4	1,234.0	9.50	27.7	C
5	1,233.0	9.65	28.2	C
6	1,234.0	9.26	27.0	C
7	1,233.0	9.02	26.3	C
8	1,237.0	8.77	25.5	C
9	1,234.0	9.33	27.2	C
10	1,231.0	9.20	26.9	C
<b>Average:</b>	<b>1,234.1</b>	<b>9.30</b>	<b>27.1</b>	<b>C</b>

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Intersection Level of Service by Lane Group - Total Control Delay

**STATE RT 39, 720504701, 720504700 & 720504703**

**NODE: 720409962**

Lane Group	Street Name	Superlink ID	Average	Std Dev	Minimum	Maximum	# Samples
EB L	STATE RT 39	720504699	2.3	0.3	1.7	2.8	10
EB T	STATE RT 39	720504699	6.7	0.4	6.0	7.3	10
NB LT	[Unnamed Street]	720504701	4.6	0.5	4.1	5.3	10
NB R	[Unnamed Street]	720504701	2.8	0.2	2.6	3.0	10
WB T	STATE RT 39	720496106	9.3	0.3	8.8	9.7	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Intersection Level of Service by Lane Group - Avg Control Delay

**STATE RT 39, 720504701, 720504700 & 720504703**

**NODE: 720409962**

Lane Group	Street Name	Superlink ID	Average	Std Dev	Minimum	Maximum	# Samples
EB L	STATE RT 39	720504699	59.0	8.2	44.5	71.4	10
EB T	STATE RT 39	720504699	25.3	1.5	22.7	27.3	10
NB LT	[Unnamed Street]	720504701	60.2	6.2	53.2	68.7	10
NB R	[Unnamed Street]	720504701	27.4	1.6	25.2	29.4	10
WB T	STATE RT 39	720496106	27.1	0.8	25.5	28.2	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

# Lane Queue by Intersection - Overview

**STATE RT 39, 720504701, 720504700 & 720504703**

**NODE: 720409962**

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>EB L on STATE RT 39 - Lane ID 33625097</b>						
1	119.0	53.1	2.2	146.5	5.1	0.0%
2	119.0	61.6	2.2	180.2	7.0	0.0%
3	119.0	41.0	1.7	121.8	4.0	0.0%
4	119.0	48.9	2.0	121.8	5.0	0.0%
5	119.0	38.9	1.6	121.1	4.0	0.0%
6	119.0	32.7	1.5	99.3	4.0	0.0%
7	119.0	65.6	2.4	203.4	6.1	0.0%
8	119.0	62.1	2.3	179.7	6.0	0.0%
9	119.0	57.1	2.1	150.9	5.0	0.0%
10	119.0	46.7	1.9	127.0	5.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>50.8</b>	<b>2.0</b>	<b>145.2</b>	<b>5.1</b>	<b>0.0%</b>

<b>EB T on STATE RT 39 - Lane ID 33625077</b>						
1	119.0	80.9	3.2	304.0	12.0	0.0%
2	119.0	79.6	3.1	298.0	11.1	0.0%
3	119.0	69.0	2.6	258.1	10.0	0.0%
4	119.0	61.0	2.5	259.2	10.0	0.0%
5	119.0	58.1	2.4	257.4	10.0	0.0%
6	119.0	80.8	3.0	298.1	11.0	0.0%
7	119.0	71.9	2.8	270.2	10.0	0.0%
8	119.0	75.5	2.9	304.6	10.0	0.0%
9	119.0	74.8	2.9	269.6	10.0	0.0%
10	119.0	75.6	2.8	274.0	10.0	0.0%
<b>Average:</b>	<b>119.0</b>	<b>72.7</b>	<b>2.8</b>	<b>279.3</b>	<b>10.4</b>	<b>0.0%</b>

<b>EB T on STATE RT 39 - Lane ID 33625078</b>						
1	119.0	75.6	2.8	264.1	9.1	0.0%
2	119.0	73.1	2.5	254.5	9.0	0.0%
3	119.0	70.5	2.5	268.6	9.0	0.0%
4	119.0	54.7	2.1	228.9	9.0	0.0%
5	119.0	54.8	2.1	220.9	8.0	0.0%
6	119.0	71.8	2.7	259.1	10.0	0.0%
7	119.0	67.0	2.5	263.3	9.0	0.0%
8	119.0	73.2	2.8	266.5	10.0	0.0%
9	119.0	76.6	2.9	290.7	10.1	0.0%
10	119.0	70.0	2.6	267.7	9.0	0.0%

## STATE RT 39, 720504701, 720504700 &amp; 720504703

NODE: 720409962

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>EB T on STATE RT 39 - Lane ID 33625078</b>						
Average:	119.0	68.7	2.6	258.4	9.2	0.0%
<b>NB LT on [Unnamed Street] - Lane ID 33625087</b>						
1	119.0	132.7	4.7	293.7	10.0	0.0%
2	119.0	95.9	3.5	256.7	8.0	0.0%
3	119.0	126.8	4.6	322.7	11.0	0.0%
4	119.0	111.8	3.9	284.1	9.1	0.0%
5	119.0	133.6	4.8	322.6	10.1	0.0%
6	119.0	91.7	3.5	232.7	8.0	0.0%
7	119.0	108.7	3.9	256.0	9.0	0.0%
8	119.0	100.4	3.8	258.7	9.0	0.0%
9	119.0	105.4	3.9	251.6	9.0	0.0%
10	119.0	132.1	4.6	313.7	10.0	0.0%
Average:	119.0	113.9	4.1	279.3	9.3	0.0%
<b>NB R on [Unnamed Street] - Lane ID 33625088</b>						
1	119.0	66.1	2.3	216.0	7.1	0.0%
2	119.0	55.6	2.1	221.7	7.1	0.0%
3	119.0	63.3	2.4	211.3	7.1	0.0%
4	119.0	64.2	2.3	233.3	8.0	0.0%
5	119.0	72.8	2.7	221.1	8.0	0.0%
6	119.0	56.4	2.0	200.7	7.0	0.0%
7	119.0	63.8	2.4	206.6	8.0	0.0%
8	119.0	56.5	2.1	205.2	7.1	0.0%
9	119.0	56.9	2.1	187.5	7.0	0.0%
10	119.0	61.4	2.1	238.5	7.0	0.0%
Average:	119.0	61.7	2.3	214.2	7.3	0.0%
<b>WB T on STATE RT 39 - Lane ID 33578448</b>						
1	119.0	104.8	3.9	285.0	10.1	0.0%
2	119.0	97.2	3.7	276.8	9.1	0.0%
3	119.0	109.6	4.1	284.8	10.0	0.0%
4	119.0	114.3	4.3	285.4	10.1	0.0%
5	119.0	108.8	4.0	284.6	10.0	0.0%
6	119.0	98.5	3.8	267.8	10.0	0.0%
7	119.0	111.3	4.1	288.0	10.0	0.0%
8	119.0	97.2	3.8	262.7	10.0	0.0%
9	119.0	97.4	3.6	255.2	10.0	0.0%
10	119.0	99.0	3.9	263.2	9.0	0.0%
Average:	119.0	103.8	3.9	275.4	9.8	0.0%

## STATE RT 39, 720504701, 720504700 &amp; 720504703

NODE: 720409962

Run	Observations	Avg Queue Length (ft)	Avg Vehicles Queued	95th Percentile Length (ft)	95th Percentile Num Queued	Spillback Rate (%)
<b>WB T on STATE RT 39 - Lane ID 33578449</b>						
1	119.0	75.3	2.8	352.6	13.0	0.0%
2	119.0	78.4	2.9	378.4	13.0	0.0%
3	119.0	84.4	3.2	372.7	13.1	0.0%
4	119.0	74.1	2.7	395.6	14.0	0.0%
5	119.0	88.6	3.2	384.9	13.1	0.0%
6	119.0	72.5	2.8	346.2	13.0	0.0%
7	119.0	64.7	2.4	364.6	14.0	0.0%
8	119.0	89.4	3.3	353.7	13.0	0.0%
9	119.0	92.7	3.5	398.0	14.1	0.0%
10	119.0	76.1	2.8	360.8	13.1	0.0%
<b>Average:</b>	<b>119.0</b>	<b>79.6</b>	<b>3.0</b>	<b>370.8</b>	<b>13.3</b>	<b>0.0%</b>



Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Avg Queue

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB LT	33625087	[Unnamed Street]	113.9	16.1	91.7	133.6	10
NB R	33625088	[Unnamed Street]	61.7	5.5	55.6	72.8	10

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	103.8	6.7	97.2	114.3	10
WB T	33578449	STATE RT 39	79.6	8.9	64.7	92.7	10
EB T	33625077	STATE RT 39	72.7	7.9	58.1	80.9	10
EB T	33625078	STATE RT 39	68.7	7.9	54.7	76.6	10
EB L	33625097	STATE RT 39	50.8	11.0	32.7	65.6	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Avg Num Queued

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB LT	33625087	[Unnamed Street]	4.1	0.5	3.5	4.8	10
NB R	33625088	[Unnamed Street]	2.3	0.2	2.0	2.7	10

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	3.9	0.2	3.6	4.3	10
WB T	33578449	STATE RT 39	3.0	0.3	2.4	3.5	10
EB T	33625077	STATE RT 39	2.8	0.3	2.4	3.2	10
EB T	33625078	STATE RT 39	2.6	0.3	2.1	2.9	10
EB L	33625097	STATE RT 39	2.0	0.3	1.5	2.4	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Percentile Queue

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB LT	33625087	[Unnamed Street]	279.3	32.6	232.7	322.7	10
NB R	33625088	[Unnamed Street]	214.2	15.3	187.5	238.5	10

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	275.4	12.0	255.2	288.0	10
WB T	33578449	STATE RT 39	370.8	18.2	346.2	398.0	10
EB T	33625077	STATE RT 39	279.3	19.7	257.4	304.6	10
EB T	33625078	STATE RT 39	258.4	20.1	220.9	290.7	10
EB L	33625097	STATE RT 39	145.2	33.3	99.3	203.4	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Percentile Num Queued

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB LT	33625087	[Unnamed Street]	9.3	1.0	8.0	11.0	10
NB R	33625088	[Unnamed Street]	7.3	0.5	7.0	8.0	10

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	9.8	0.4	9.0	10.1	10
WB T	33578449	STATE RT 39	13.3	0.5	13.0	14.1	10
EB T	33625077	STATE RT 39	10.4	0.7	10.0	12.0	10
EB T	33625078	STATE RT 39	9.2	0.6	8.0	10.1	10
EB L	33625097	STATE RT 39	5.1	1.0	4.0	7.0	10

Project: US 39 & Stonecreek RB  
 Scenario: PM Peak  
 Run(s): Batch (10 runs)  
 Simulated: Various  
 Time: 17:00:00 - 18:00:00  
 Interval: Summary  
 Selection: Instant Report

## Lane Queue by Intersection - Spillback Rate

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
NB LT	33625087	[Unnamed Street]	0.0	0.0	0.0	0.0	10
NB R	33625088	[Unnamed Street]	0.0	0.0	0.0	0.0	10

### STATE RT 39, 720504701, 720504700 & 720504703

NODE: 720409962

Movement							
s	Lane ID	Street Name	Average	Std Deviation	Minimum	Maximum	# Samples
WB T	33578448	STATE RT 39	0.0	0.0	0.0	0.0	10
WB T	33578449	STATE RT 39	0.0	0.0	0.0	0.0	10
EB T	33625077	STATE RT 39	0.0	0.0	0.0	0.0	10
EB T	33625078	STATE RT 39	0.0	0.0	0.0	0.0	10
EB L	33625097	STATE RT 39	0.0	0.0	0.0	0.0	10