

**Appendix III/IV.L**  
**Transportation**

III/IV.L-3: Synchro Output Reports -  
2023 Existing Conditions

Intersection						
Int Delay, s/veh	7.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	77	41	26	64	91	54
Future Vol, veh/h	77	41	26	64	91	54
Conflicting Peds, #/hr	2	0	96	0	0	96
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	90	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	42	79	79	72	72
Heavy Vehicles, %	0	11	4	0	1	0
Mvmt Flow	183	98	33	81	126	75

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	409	260	297	0	0
Stage 1	260	-	-	-	-
Stage 2	149	-	-	-	-
Critical Hdwy	6.4	6.31	4.14	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.399	2.236	-	-
Pot Cap-1 Maneuver	602	757	1253	-	-
Stage 1	788	-	-	-	-
Stage 2	884	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	481	686	1136	-	-
Mov Cap-2 Maneuver	481	-	-	-	-
Stage 1	694	-	-	-	-
Stage 2	802	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	2.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1136	-	481	686	-	-
HCM Lane V/C Ratio	0.029	-	0.381	0.142	-	-
HCM Control Delay (s)	8.3	-	17	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.8	0.5	-	-

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	37	23	31	54	76	56
Future Vol, veh/h	37	23	31	54	76	56
Conflicting Peds, #/hr	0	0	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	66	66	78	78
Heavy Vehicles, %	0	0	0	2	9	0
Mvmt Flow	55	34	47	82	97	72

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	367	191	191	0	0
Stage 1	191	-	-	-	-
Stage 2	176	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	637	856	1395	-	0
Stage 1	846	-	-	-	0
Stage 2	859	-	-	-	0
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	521	789	1286	-	-
Mov Cap-2 Maneuver	521	-	-	-	-
Stage 1	750	-	-	-	-
Stage 2	792	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	2.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1286	-	599	-
HCM Lane V/C Ratio	0.037	-	0.15	-
HCM Control Delay (s)	7.9	0	12.1	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-

Hudson Highlands Fjord Trail  
3: South Ave. & Route 9D

Existing 2023  
Saturday Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	15	233	16	29	276	47	15	13	24	29	8	4
Future Volume (vph)	15	233	16	29	276	47	15	13	24	29	8	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	13	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			1.00	
Frt		0.992			0.982			0.937			0.986	
Flt Protected		0.997			0.996			0.986			0.966	
Satd. Flow (prot)	0	1926	0	0	1940	0	0	1722	0	0	1926	0
Flt Permitted		0.971			0.952			0.935			0.829	
Satd. Flow (perm)	0	1875	0	0	1854	0	0	1632	0	0	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			16			34			5	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		635			504			277			487	
Travel Time (s)		14.4			11.5			7.6			11.1	
Confl. Peds. (#/hr)	7		2	2		7	1		1	1		1
Confl. Bikes (#/hr)						24						
Peak Hour Factor	0.74	0.74	0.74	0.92	0.92	0.92	0.71	0.71	0.71	0.86	0.86	0.86
Heavy Vehicles (%)	0%	3%	21%	0%	2%	0%	15%	0%	0%	0%	0%	0%
Adj. Flow (vph)	20	315	22	32	300	51	21	18	34	34	9	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	357	0	0	383	0	0	73	0	0	48	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.96	1.00	1.00	0.92	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		30.0			30.0			25.0			25.0	
Actuated g/C Ratio		0.46			0.46			0.38			0.38	
v/c Ratio		0.41			0.44			0.11			0.08	
Control Delay		13.2			13.4			8.6			12.1	

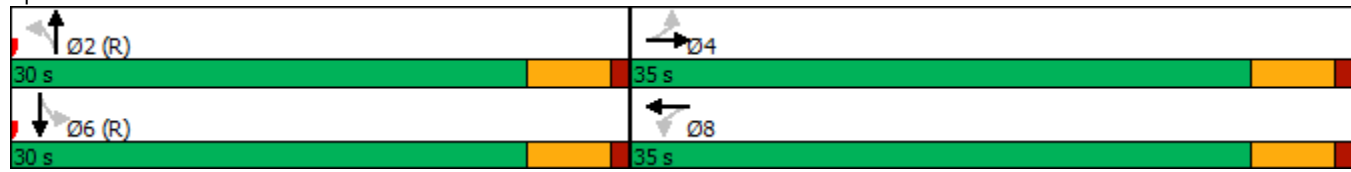


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.2			13.4			8.6			12.1	
LOS		B			B			A			B	
Approach Delay		13.2			13.4			8.6			12.1	
Approach LOS		B			B			A			B	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.44
Intersection Signal Delay:	12.8
Intersection LOS:	B
Intersection Capacity Utilization	43.7%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 3: South Ave. & Route 9D



Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	73	11	480	53	36
Future Vol, veh/h	240	73	11	480	53	36
Conflicting Peds, #/hr	0	55	55	0	41	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	96	96	62	62
Heavy Vehicles, %	8	6	9	5	6	0
Mvmt Flow	320	97	11	500	85	58

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	472	0	987
Stage 1	-	-	-	-	424
Stage 2	-	-	-	-	563
Critical Hdwy	-	-	4.19	-	6.46
Critical Hdwy Stg 1	-	-	-	-	5.46
Critical Hdwy Stg 2	-	-	-	-	5.46
Follow-up Hdwy	-	-	2.281	-	3.554
Pot Cap-1 Maneuver	-	-	1054	-	270
Stage 1	-	-	-	-	652
Stage 2	-	-	-	-	562
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1006	-	245
Mov Cap-2 Maneuver	-	-	-	-	245
Stage 1	-	-	-	-	622
Stage 2	-	-	-	-	534

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	25
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	321	-	-	1006	-
HCM Lane V/C Ratio	0.447	-	-	0.011	-
HCM Control Delay (s)	25	-	-	8.6	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	2.2	-	-	0	-

Hudson Highlands Fjord Trail  
 5: Route 9D (Chestnut St.)/Route 9D (Morris Ave.) & Main St.

Existing 2023  
 Saturday Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	37	113	107	79	162	209	144	310	105	89	197	37
Future Volume (vph)	37	113	107	79	162	209	144	310	105	89	197	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	11	12	12	11	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.77			0.71			0.91			0.93	
Frt		0.944			0.937			0.975			0.985	
Flt Protected		0.993			0.991			0.987			0.986	
Satd. Flow (prot)	0	1088	0	0	977	0	0	1432	0	0	1606	0
Flt Permitted		0.891			0.883			0.762			0.695	
Satd. Flow (perm)	0	951	0	0	830	0	0	1050	0	0	1116	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		47						15			8	
Link Speed (mph)		25			30			30			30	
Link Distance (ft)		299			289			346			546	
Travel Time (s)		8.2			6.6			7.9			12.4	
Confl. Peds. (#/hr)	307		202	202		307	171		87	87		171
Confl. Bikes (#/hr)			1						2			1
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.93	0.93	0.93	0.86	0.86	0.86
Heavy Vehicles (%)	3%	12%	17%	1%	4%	16%	1%	5%	0%	2%	7%	3%
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Adj. Flow (vph)	44	133	126	88	180	232	155	333	113	103	229	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	0	0	500	0	0	601	0	0	375	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.19	1.00	1.00	1.29	1.00	1.00	1.24	1.00	1.00	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	55		20	55		20	55		20	55	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	25		20	25		20	25		20	25	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		30			30			30			30	
Detector 2 Size(ft)		25			25			25			25	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Hudson Highlands Fjord Trail  
 5: Route 9D (Chestnut St.)/Route 9D (Morris Ave.) & Main St.

Existing 2023  
 Saturday Peak Hour

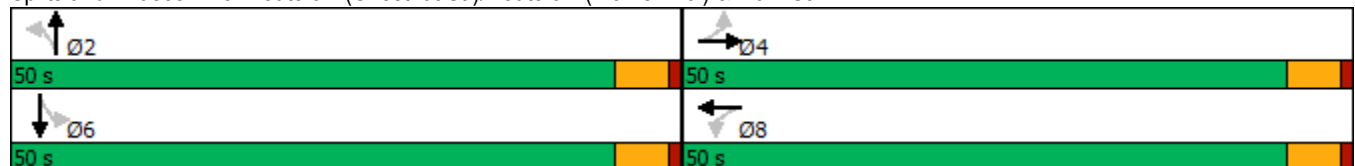


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		24.0	24.0		24.0	24.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		45.0			45.0			45.0			45.0	
Actuated g/C Ratio		0.45			0.45			0.45			0.45	
v/c Ratio		0.67			1.34			1.25			0.74	
Control Delay		26.8			197.1			156.6			32.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.8			197.1			156.6			32.9	
LOS		C			F			F			C	
Approach Delay		26.8			197.1			156.6			32.9	
Approach LOS		C			F			F			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.34  
 Intersection Signal Delay: 119.8  
 Intersection LOS: F  
 Intersection Capacity Utilization 90.0%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 5: Route 9D (Chestnut St.)/Route 9D (Morris Ave.) & Main St.





Intersection						
Int Delay, s/veh	11.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	11	126	247	67	100	85
Future Vol, veh/h	11	126	247	67	100	85
Conflicting Peds, #/hr	200	0	0	200	35	81
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	89	89	83	83
Heavy Vehicles, %	0	14	2	0	4	1
Mvmt Flow	14	164	278	75	120	102

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	553	0	-	0	743
Stage 1	-	-	-	-	516
Stage 2	-	-	-	-	227
Critical Hdwy	4.1	-	-	-	6.44
Critical Hdwy Stg 1	-	-	-	-	5.44
Critical Hdwy Stg 2	-	-	-	-	5.44
Follow-up Hdwy	2.2	-	-	-	3.536
Pot Cap-1 Maneuver	1027	-	-	-	380
Stage 1	-	-	-	-	595
Stage 2	-	-	-	-	806
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	884	-	-	-	277
Mov Cap-2 Maneuver	-	-	-	-	277
Stage 1	-	-	-	-	503
Stage 2	-	-	-	-	694

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	36.9
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	884	-	-	-	326
HCM Lane V/C Ratio	0.016	-	-	-	0.684
HCM Control Delay (s)	9.1	0	-	-	36.9
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	4.7

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	100	28	18	104	110	51
Future Vol, veh/h	100	28	18	104	110	51
Conflicting Peds, #/hr	0	0	53	0	0	53
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	90	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	83	83	73	73
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	141	39	22	125	151	70

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	408	239	274	0	-	0
Stage 1	239	-	-	-	-	-
Stage 2	169	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	603	795	1301	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	532	754	1234	-	-	-
Mov Cap-2 Maneuver	532	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1234	-	532	754	-	-
HCM Lane V/C Ratio	0.018	-	0.265	0.052	-	-
HCM Control Delay (s)	8	-	14.2	10	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	0.2	-	-

Intersection						
Int Delay, s/veh	8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	88	55	54	36	41	94
Future Vol, veh/h	88	55	54	36	41	94
Conflicting Peds, #/hr	0	0	40	0	0	40
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	79	79	85	85
Heavy Vehicles, %	0	2	0	0	3	0
Mvmt Flow	128	80	68	46	48	111

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	270	88	88	0	-	0
Stage 1	88	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	724	970	1520	-	-	0
Stage 1	940	-	-	-	-	0
Stage 2	854	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	645	938	1469	-	-	-
Mov Cap-2 Maneuver	645	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	4.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1469	-	733	-
HCM Lane V/C Ratio	0.047	-	0.283	-
HCM Control Delay (s)	7.6	0	11.8	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-

Hudson Highlands Fjord Trail  
3: South Ave. & Route 9D

Existing 2023  
Sunday Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	6	252	30	11	262	34	14	13	14	37	8	10
Future Volume (vph)	6	252	30	11	262	34	14	13	14	37	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	13	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			1.00	
Frt		0.986			0.985			0.954			0.975	
Flt Protected		0.999			0.998			0.983			0.968	
Satd. Flow (prot)	0	1991	0	0	1987	0	0	1749	0	0	1913	0
Flt Permitted		0.992			0.984			0.922			0.828	
Satd. Flow (perm)	0	1977	0	0	1959	0	0	1641	0	0	1632	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			13			19			13	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		635			504			277			487	
Travel Time (s)		14.4			11.5			7.6			11.1	
Confl. Peds. (#/hr)	3		5	5		3			3	3		
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.88	0.88	0.88	0.81	0.81	0.81	0.73	0.73	0.73	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%
Adj. Flow (vph)	7	286	34	14	323	42	19	18	19	46	10	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	327	0	0	379	0	0	56	0	0	69	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.96	1.00	1.00	0.92	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		30.0			30.0			25.0			25.0	
Actuated g/C Ratio		0.46			0.46			0.38			0.38	
v/c Ratio		0.36			0.42			0.09			0.11	
Control Delay		12.2			13.0			9.9			11.5	

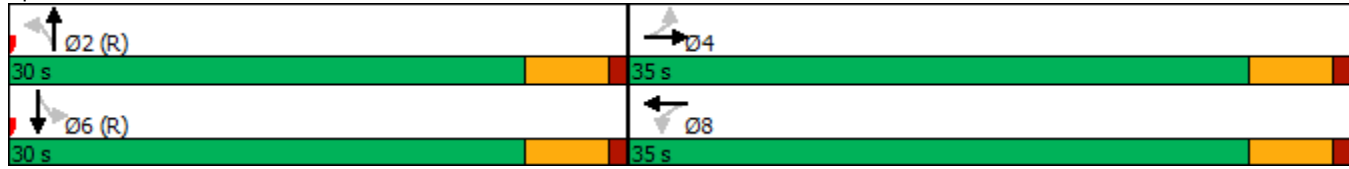


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.2			13.0			9.9			11.5	
LOS		B			B			A			B	
Approach Delay		12.2			13.0			9.9			11.5	
Approach LOS		B			B			A			B	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	12.4
Intersection LOS:	B
Intersection Capacity Utilization	38.2%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 3: South Ave. & Route 9D



Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	221	99	15	365	40	29
Future Vol, veh/h	221	99	15	365	40	29
Conflicting Peds, #/hr	0	17	17	0	22	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	93	93	55	55
Heavy Vehicles, %	5	1	0	3	4	0
Mvmt Flow	283	127	16	392	73	53

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	427	0	810 374
Stage 1	-	-	-	-	364 -
Stage 2	-	-	-	-	446 -
Critical Hdwy	-	-	4.1	-	6.44 6.2
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.2	-	3.536 3.3
Pot Cap-1 Maneuver	-	-	1143	-	347 677
Stage 1	-	-	-	-	699 -
Stage 2	-	-	-	-	641 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1127	-	330 662
Mov Cap-2 Maneuver	-	-	-	-	330 -
Stage 1	-	-	-	-	689 -
Stage 2	-	-	-	-	618 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	418	-	-	1127	-
HCM Lane V/C Ratio	0.3	-	-	0.014	-
HCM Control Delay (s)	17.3	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0	-

Hudson Highlands Fjord Trail  
 5: Route 9D (Chestnut St.)/Route 9D (Morris Ave.) & Main St.

Existing 2023  
 Sunday Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	28	78	60	68	157	96	181	321	66	81	208	55
Future Volume (vph)	28	78	60	68	157	96	181	321	66	81	208	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	11	12	12	11	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.87			0.86			0.95			0.95	
Frt		0.951			0.959			0.984			0.978	
Flt Protected		0.992			0.990			0.984			0.988	
Satd. Flow (prot)	0	1251	0	0	1313	0	0	1506	0	0	1663	0
Flt Permitted		0.908			0.897			0.725			0.781	
Satd. Flow (perm)	0	1115	0	0	1142	0	0	1079	0	0	1304	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		37						9			13	
Link Speed (mph)		25			30			30			30	
Link Distance (ft)		299			289			346			546	
Travel Time (s)		8.2			6.6			7.9			12.4	
Confl. Peds. (#/hr)	140		112	112		140	82		53	53		82
Confl. Bikes (#/hr)									2			1
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.99	0.99	0.99	0.85	0.85	0.85
Heavy Vehicles (%)	7%	0%	30%	0%	0%	0%	1%	2%	0%	0%	4%	2%
Parking (#/hr)	5	5	5	5	5	5	5	5	5	5	5	5
Adj. Flow (vph)	33	91	70	76	176	108	183	324	67	95	245	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	194	0	0	360	0	0	574	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.19	1.00	1.00	1.29	1.00	1.00	1.24	1.00	1.00	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	55		20	55		20	55		20	55	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	25		20	25		20	25		20	25	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		30			30			30			30	
Detector 2 Size(ft)		25			25			25			25	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Hudson Highlands Fjord Trail  
 5: Route 9D (Chestnut St.)/Route 9D (Morris Ave.) & Main St.

Existing 2023  
 Sunday Peak Hour

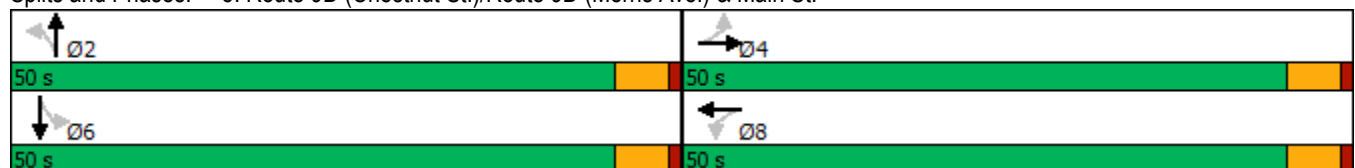


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		24.0	24.0		24.0	24.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		31.6			31.6			45.5			45.5	
Actuated g/C Ratio		0.36			0.36			0.52			0.52	
v/c Ratio		0.45			0.87			1.01			0.59	
Control Delay		19.7			47.2			66.3			20.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		19.7			47.2			66.3			20.8	
LOS		B			D			E			C	
Approach Delay		19.7			47.2			66.3			20.8	
Approach LOS		B			D			E			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 87.3  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 43.9  
 Intersection LOS: D  
 Intersection Capacity Utilization 83.5%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 5: Route 9D (Chestnut St.)/Route 9D (Morris Ave.) & Main St.





Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	8	109	297	87	0	0
Future Vol, veh/h	8	109	297	87	0	0
Conflicting Peds, #/hr	628	0	0	628	38	39
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	92	92	25	25
Heavy Vehicles, %	13	1	0	0	0	0
Mvmt Flow	8	114	323	95	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1046	0	-	0	1167 1038
Stage 1	-	-	-	-	999 -
Stage 2	-	-	-	-	168 -
Critical Hdwy	4.23	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.317	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	625	-	-	-	216 283
Stage 1	-	-	-	-	359 -
Stage 2	-	-	-	-	867 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	352	-	-	-	67 156
Mov Cap-2 Maneuver	-	-	-	-	67 -
Stage 1	-	-	-	-	197 -
Stage 2	-	-	-	-	489 -

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	352	-	-	-	-
HCM Lane V/C Ratio	0.024	-	-	-	-
HCM Control Delay (s)	15.5	0	-	-	0
HCM Lane LOS	C	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-