



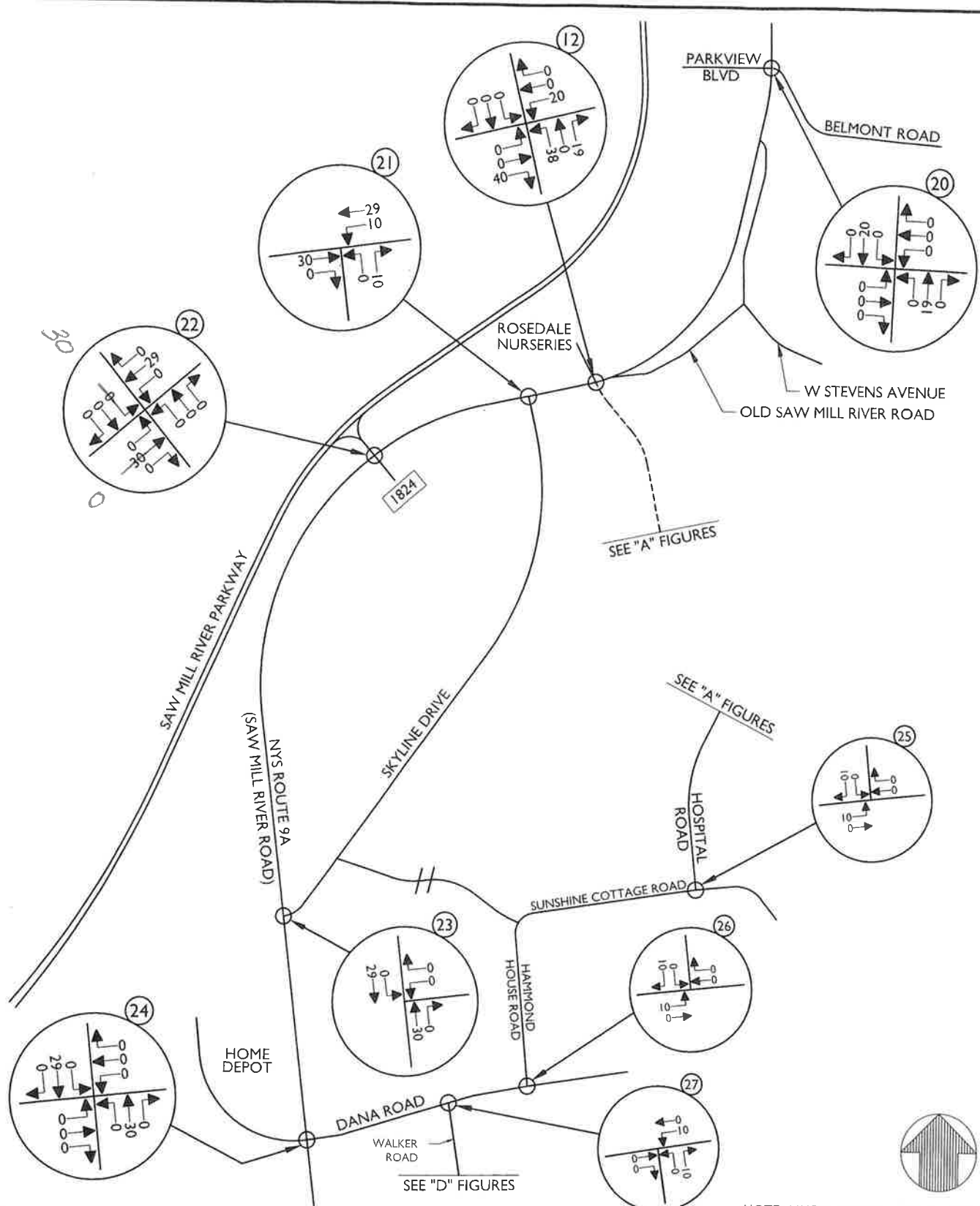
NORTH 60

ATTACHMENT 7

SENSITIVITY ANALYSIS

**NYS ROUTE 9A (SAW MILL RIVER ROAD)
SAW MILL RIVER PARKWAY NB ON/OFF RAMP)**

3592B_North 60 - 20191 Reports\Traffic\Figures\Phase I - JFM190917_JFM_9A Corridor_Figures_C.dwg(2) - C By: JMUCCIN



NOTE: LINE DIAGRAM NOT TO SCALE

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NORTH 60

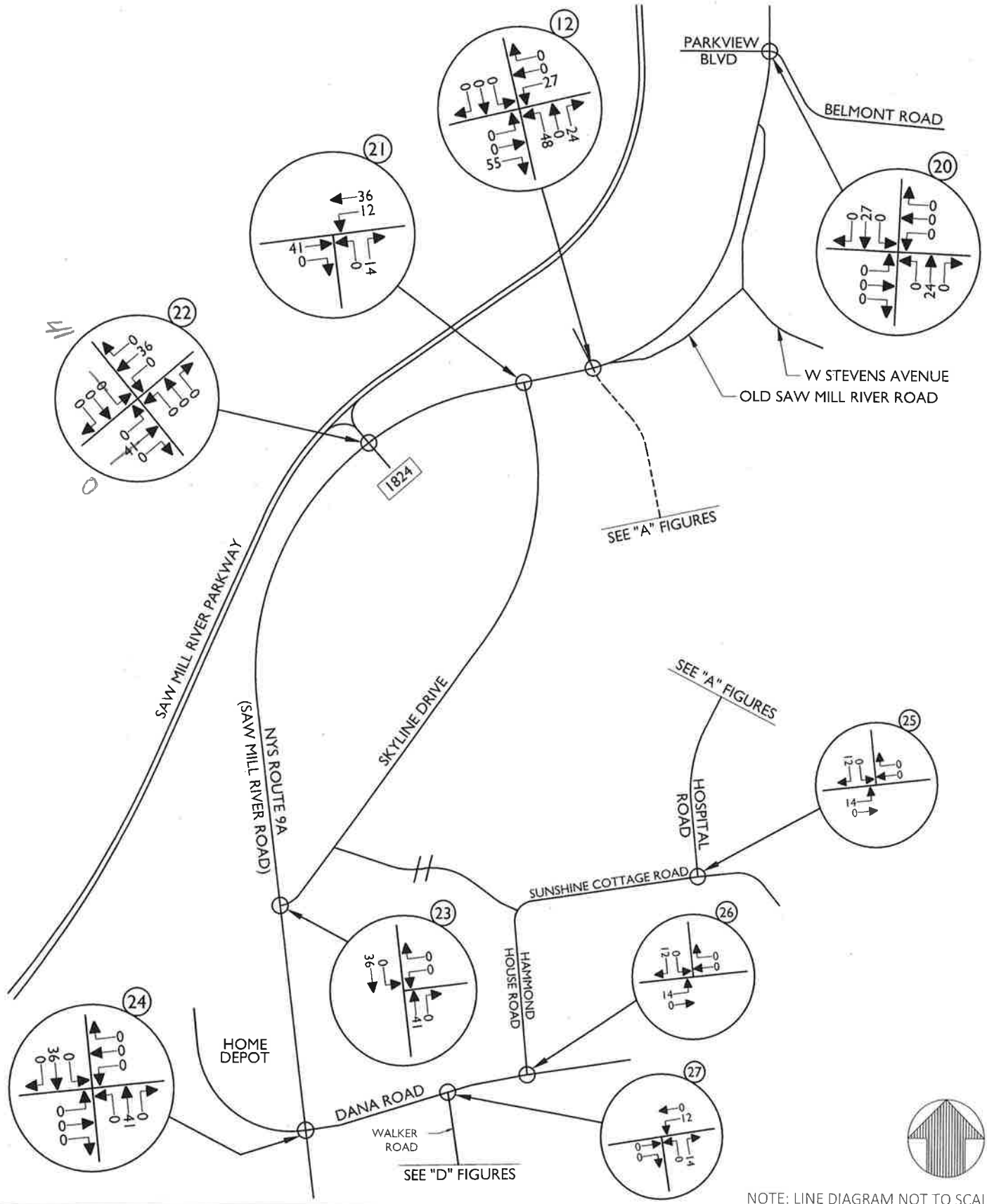
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TRAFFIC IMPACT STUDY			
SCALE: AS SHOWN	DATE: 9/13/2019	DRAWN BY: N.S.T.	CHECKED BY: J.T.C.
PROJECT NUMBER: 17003592B	DRAWING NAME: 190917_JFM_9A CORRIDOR_FIGURES_C		
SHEET TITLE: SITE GENERATED TRAFFIC VOLUMES PHASE I RETAIL/GROCERY/PHARMACY/FITNESS WEEKDAY PEAK PM HOUR			
SHEET NUMBER: FIGURE NO. 21-C			



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NORTH 60

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TRAFFIC IMPACT STUDY

SCALE: AS SHOWN	DATE: 9/13/2019	DRAWN BY: N.S.T.	CHECKED BY: J.T.C.
PROJECT NUMBER: 17003592B		DRAWING NAME: PROJ25 JPM_9A CORRIDOR FIGURES C	

SHEET TITLE:
 SITE GENERATED TRAFFIC VOLUMES
 PHASE 2
 RETAIL/GROCERY/PHARMACY/FITNESS
 WEEKDAY PEAK AM HOUR

SHEET NUMBER:
FIGURE NO. 44-C

TABLE NO. 2-S

PHASE 1

LEVEL OF SERVICE SUMMARY TABLE

LOCATION	YEAR 2019 EXISTING						YEAR 2024 NO-BUILD						YEAR 2024 BUILD - PHASE 1						SENSITIVITY ANALYSIS YEAR 2024 BUILD - PHASE 1						
	WEEKDAY AM			WEEKDAY PM			WEEKDAY AM			WEEKDAY PM			WEEKDAY AM			WEEKDAY PM			WEEKDAY AM			WEEKDAY PM			
	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	
22	NYS ROUTE 9A & SAW MILL RIVER PKWY. NB ON/OFF RAMPS 1824 DRIVEWAY <u>SIGNALIZED</u>																								
SMRP NB ON/OFF RAMPS	SEB L	D	53.6	0.76	D	53.5	0.84	D	53.9	0.77	D	53.4	0.84	E	57.7	0.81	D	54.3	0.85	E	61.9	0.84	E	55.5	0.86
	SEB L-T-R	E	68.8	0.90	A	0.0	0.00	E	70.6	0.90	A	0.0	0.00	F	87.1	0.97	A	0.0	0.00	F	100.0	1.02	A	0.0	0.00
	SEB OVERALL	E	61.8	--	D	53.5	--	E	62.9	--	D	53.4	--	E	73.8	--	D	54.3	--	E	82.9	--	E	55.5	--
1824 DRIVEWAY	NWB L	E	56.9	0.31	E	56.5	0.33	E	57.0	0.33	E	57.0	0.36	E	57.0	0.33	E	57.0	0.36	E	57.0	0.33	E	57.0	0.36
	NWB L-T	E	57.2	0.37	A	0.0	0.00	E	57.3	0.38	E	57.4	0.43	E	57.3	0.38	E	57.4	0.43	E	57.3	0.38	E	57.4	0.43
	NWB R	D	52.2	0.15	D	52.5	0.22	D	52.1	0.16	D	52.3	0.23	D	52.1	0.16	D	52.3	0.23	D	52.1	0.16	D	52.3	0.23
	NWB OVERALL	E	55.7	--	E	55.0	--	E	55.8	--	E	55.7	--	E	55.8	--	E	55.7	--	E	55.8	--	E	55.7	--
NYS ROUTE 9A	NEB L	B	11.2	0.24	A	8.9	0.54	B	13.0	0.30	B	10.2	0.60	B	15.4	0.34	B	14.3	0.69	B	15.4	0.34	B	15.4	0.70
	NEB T	B	13.8	0.31	B	11.6	0.39	B	14.7	0.34	B	12.9	0.46	B	17.3	0.41	B	13.8	0.49	B	17.1	0.39	B	14.2	0.48
	NEB T-R	B	13.8	0.31	B	11.5	0.39	B	14.7	0.34	B	12.9	0.46	B	17.3	0.41	B	13.7	0.49	B	17.1	0.39	B	14.2	0.48
	NEB OVERALL	B	13.4	--	B	10.9	--	B	14.4	--	B	12.2	--	B	17.1	--	B	13.9	--	B	16.8	--	B	14.5	--
NYS ROUTE 9A	SWB L	A	9.7	0.10	A	9.0	0.13	B	10.2	0.12	A	9.8	0.16	B	11.9	0.13	B	10.4	0.17	B	11.8	0.13	B	10.9	0.17
	SWB T	B	15.9	0.49	B	13.7	0.37	B	17.5	0.58	B	14.8	0.40	C	20.1	0.63	B	16.7	0.50	C	20.1	0.63	B	17.6	0.51
	SWB T-R	B	15.9	0.49	B	13.7	0.37	B	17.5	0.58	B	14.8	0.41	C	20.0	0.63	B	16.6	0.50	C	20.0	0.63	B	17.6	0.51
	SWB OVERALL	B	15.5	--	B	13.3	--	B	17.1	--	B	14.4	--	B	19.6	--	B	16.3	--	B	19.6	--	B	17.2	--
	OVERALL INTERSECTION	C	26.7	--	B	19.2	--	C	27.4	--	C	20.1	--	C	32.7	--	C	21.4	--	D	36.5	--	C	22.7	--

NOTES:

- 1) THE ABOVE REPRESENTS THE LEVELS OF SERVICE AND VEHICLE DELAY IN SECONDS, B [13.2] FOR EACH MOVEMENT, FOR EACH APPROACH AS WELL AS FOR THE OVERALL INTERSECTION FOR THE ABOVE SIGNALIZED INTERSECTION

TABLE NO. 4-S

PHASE 2

LEVEL OF SERVICE SUMMARY TABLE























LOCATION	YEAR 2039 NO-BUILD						YEAR 2039 BUILD - PHASE 2						SENSITIVITY ANALYSIS YEAR 2039 BUILD - PHASE 2							
	WEEKDAY AM			WEEKDAY PM			WEEKDAY AM			WEEKDAY PM			WEEKDAY AM			WEEKDAY PM				
	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C		
22	NYS ROUTE 9A & SAW MILL RIVER PKWY. NB ON/OFF RAMPS 1824 DRIVEWAY																			
	<u>SIGNALIZED</u>																			
	SMRP NB ON/OFF RAMPS	SEB L	D	53.9	0.77	D	53.4	0.84	F	92.2	1.04	E	55.5	0.86	F	113.5	1.10	E	57.8	0.88
		SEB L-T-R	E	70.6	0.90	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00
		SEB OVERALL	E	62.9	--	D	53.4	--	F	92.2	--	E	55.5	--	F	113.5	--	E	57.8	--
	1824 DRIVEWAY	NWB L	E	57.0	0.33	E	57.0	0.36	E	57.0	0.33	E	57.0	0.36	E	57.0	0.33	E	57.0	0.36
		NWB L-T	E	57.3	0.38	E	57.4	0.43	E	57.3	0.38	E	57.4	0.43	E	57.3	0.38	E	57.4	0.43
		NWB R	D	52.1	0.16	D	52.3	0.23	D	52.1	0.16	D	52.3	0.23	D	52.1	0.16	D	52.3	0.23
		NWB OVERALL	E	55.8	--	E	55.7	--	E	55.8	--	E	55.7	--	E	55.8	--	E	55.7	--
	NYS ROUTE 9A	NEB L	B	13.4	0.31	B	10.3	0.60	B	16.9	0.38	C	30.4	0.85	B	16.9	0.38	C	35.0	0.87
		NEB T	B	14.8	0.35	B	13.0	0.46	B	17.8	0.43	B	14.8	0.51	B	17.2	0.40	B	15.6	0.50
		NEB T-R	B	14.8	0.35	B	12.9	0.46	B	17.7	0.43	B	14.7	0.51	B	17.2	0.40	B	15.6	0.50
		NEB OVERALL	B	14.6	--	B	12.3	--	B	17.6	--	B	18.3	--	B	17.2	--	C	20.2	--
	NYS ROUTE 9A	SWB L	B	10.3	0.12	A	9.9	0.16	B	12.1	0.14	B	11.2	0.18	B	11.9	0.13	B	12.1	0.18
		SWB T	B	17.8	0.59	B	14.8	0.41	C	20.6	0.69	B	19.6	0.64	C	20.6	0.69	C	21.7	0.66
		SWB T-R	B	17.7	0.59	B	14.8	0.41	C	20.6	0.69	B	19.6	0.64	C	20.6	0.69	C	21.7	0.66
		SWB OVERALL	B	17.3	--	B	14.5	--	C	20.2	--	B	19.1	--	C	20.2	--	C	21.2	--
	OVERALL INTERSECTION		C	27.3	--	C	20.1	--	D	38.5	--	C	24.6	--	D	45.1	--	C	27.2	--

NOTES:

- 1) THE ABOVE REPRESENTS THE LEVELS OF SERVICE AND VEHICLE DELAY IN SECONDS, B [13.2] FOR EACH MOVEMENT, FOR EACH APPROACH AS WELL AS FOR THE OVERALL INTERSECTION FOR THE ABOVE SIGNALIZED INTERSECTIONS

2024 Build Traffic Volumes - Sensitivity Analysis - INT #22
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak AM Hour
 12/02/2020

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	413	26	92	40	11	21	87	517	42	57	1038	12
Future Volume (vph)	413	26	92	40	11	21	87	517	42	57	1038	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	11	11	11	11	11	11	11	11
Grade (%)		5%			-9%			-1%			-1%	
Storage Length (ft)	150		0	100		60	230		0	150		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	86			86			86			86		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00				0.99						
Frt		0.947				0.850		0.989			0.998	
Flt Protected	0.950	0.973		0.950	0.972		0.950			0.950		
Satd. Flow (prot)	1530	1497	0	1732	1772	1631	1670	2674	0	1719	3022	0
Flt Permitted	0.950	0.973		0.950	0.972		0.129			0.379		
Satd. Flow (perm)	1528	1496	0	1732	1772	1610	227	2674	0	686	3022	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				64		7			1	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		211			341			3169			1261	
Travel Time (s)		4.8			7.8			48.0			19.1	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	5%	32%	2%	2%	16%	0%
Adj. Flow (vph)	449	28	100	43	12	23	95	562	46	62	1128	13
Shared Lane Traffic (%)	35%			37%								
Lane Group Flow (vph)	292	285	0	27	28	23	95	608	0	62	1141	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)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	0.99	0.99	0.99	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template												
Leading Detector (ft)	35	83		35	83	35	35	83		35	83	
Trailing Detector (ft)	-5	-5		-5	-5	-5	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5	-5	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40	40	40	40		40	40	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	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	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

2024 Build Traffic Volumes - Sensitivity Analysis - INT #22
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak AM Hour
 12/02/2020

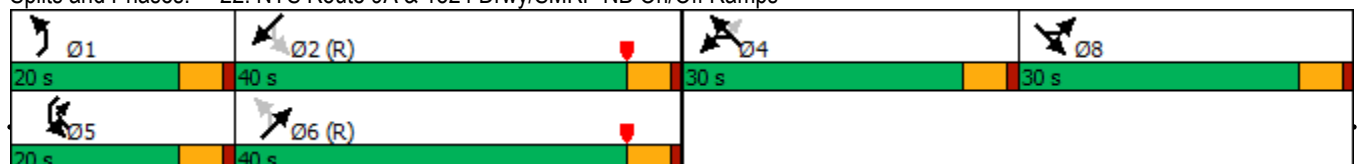


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4	5	1	6		5	2	
Permitted Phases						4	6			2		
Detector Phase	8	8		4	4	5	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	15.0		10.0	15.0	
Total Split (s)	30.0	30.0		30.0	30.0	20.0	20.0	40.0		20.0	40.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%	16.7%	16.7%	33.3%		16.7%	33.3%	
Maximum Green (s)	25.0	25.0		25.0	25.0	15.0	15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag						Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio	0.78	0.75		0.28	0.29	0.10	0.42	0.44		0.15	0.78	
Control Delay	57.1	51.3		61.3	61.3	0.9	18.8	22.6		11.1	27.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	57.1	51.3		61.3	61.3	0.9	18.8	22.6		11.1	27.0	
Queue Length 50th (ft)	222	200		21	22	0	32	161		14	356	
Queue Length 95th (ft)	312	289		53	54	0	68	252		m21	m#603	
Internal Link Dist (ft)		131			261			3089			1181	
Turn Bay Length (ft)	150			100		60	230			150		
Base Capacity (vph)	381	388		360	369	332	314	1373		533	1464	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.77	0.73		0.07	0.08	0.07	0.30	0.44		0.12	0.78	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps



2024 Build Traffic Volumes - Sensitivity Analysis - INT #22
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak AM Hour
 12/02/2020



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	413	26	92	40	11	21	87	517	42	57	1038	12
Future Volume (veh/h)	413	26	92	40	11	21	87	517	42	57	1038	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1753	1753	2254	2254	2254	1864	1459	1459	1909	1699	1699
Adj Flow Rate, veh/h	288	253	100	28	34	23	95	562	46	62	1128	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	0	0	0	5	32	32	2	16	16
Cap, veh/h	342	249	98	84	88	144	282	1426	116	478	1784	21
Arrive On Green	0.21	0.21	0.21	0.04	0.04	0.04	0.04	0.55	0.55	0.04	0.55	0.55
Sat Flow, veh/h	1641	1195	472	2147	2254	1896	1776	2595	212	1818	3269	38
Grp Volume(v), veh/h	288	0	353	28	34	23	95	300	308	62	557	584
Grp Sat Flow(s),veh/h/ln	1641	0	1667	2147	2254	1896	1776	1386	1421	1818	1614	1692
Q Serve(g_s), s	20.2	0.0	25.0	1.5	1.8	1.4	2.8	14.9	15.0	1.8	28.7	28.7
Cycle Q Clear(g_c), s	20.2	0.0	25.0	1.5	1.8	1.4	2.8	14.9	15.0	1.8	28.7	28.7
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.15	1.00		0.02
Lane Grp Cap(c), veh/h	342	0	347	84	88	144	282	761	781	478	881	924
V/C Ratio(X)	0.84	0.00	1.02	0.33	0.38	0.16	0.34	0.39	0.39	0.13	0.63	0.63
Avail Cap(c_a), veh/h	342	0	347	447	470	465	433	761	781	639	881	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.34	0.34	0.34
Uniform Delay (d), s/veh	45.6	0.0	47.5	56.1	56.2	51.9	15.1	15.5	15.6	11.8	18.9	18.9
Incr Delay (d2), s/veh	16.3	0.0	52.5	0.9	1.0	0.2	0.3	1.5	1.5	0.0	1.2	1.1
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	9.8	0.0	15.4	0.8	1.0	0.7	1.0	4.7	4.8	0.7	10.1	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	0.0	100.0	57.0	57.3	52.1	15.4	17.1	17.1	11.8	20.1	20.0
LnGrp LOS	E	A	F	E	E	D	B	B	B	B	C	C
Approach Vol, veh/h		641			85			703			1203	
Approach Delay, s/veh		82.9			55.8			16.8			19.6	
Approach LOS		F			E			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	70.5		9.7	9.4	70.9		30.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	35.0		25.0	15.0	35.0		25.0				
Max Q Clear Time (g_c+I1), s	4.8	30.7		3.8	3.8	17.0		27.0				
Green Ext Time (p_c), s	0.1	2.4		0.1	0.0	2.9		0.0				

Intersection Summary

HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

2024 Build Traffic Volumes - Sensitivity Analysis - INT #22
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak PM Hour
 12/02/2020

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	311	17	39	44	11	29	288	873	51	56	742	84
Future Volume (vph)	311	17	39	44	11	29	288	873	51	56	742	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	11	11	11	11	11	11	11	11
Grade (%)		5%			-9%			-1%				-1%
Storage Length (ft)	150		0	100		60	230		0	150		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	86			86			86			86		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00				0.99						
Frt		0.968				0.850		0.992			0.985	
Flt Protected	0.950	0.967		0.950	0.971		0.950			0.950		
Satd. Flow (prot)	1560	1538	0	1732	1770	1631	1754	3260	0	1719	3044	0
Flt Permitted	0.950	0.967		0.950	0.971		0.126			0.273		
Satd. Flow (perm)	1558	1536	0	1732	1770	1610	233	3260	0	494	3044	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				64		5			10	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		211			341			3169			1261	
Travel Time (s)		4.8			7.8			48.0			19.1	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	7%	2%	2%	15%	0%
Adj. Flow (vph)	353	19	44	50	13	33	327	992	58	64	843	95
Shared Lane Traffic (%)	40%			38%								
Lane Group Flow (vph)	212	204	0	31	32	33	327	1050	0	64	938	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)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	0.99	0.99	0.99	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template												
Leading Detector (ft)	35	83		35	83	35	35	83		35	83	
Trailing Detector (ft)	-5	-5		-5	-5	-5	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5	-5	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40	40	40	40		40	40	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	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	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

2024 Build Traffic Volumes - Sensitivity Analysis - INT #22
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak PM Hour
 12/02/2020

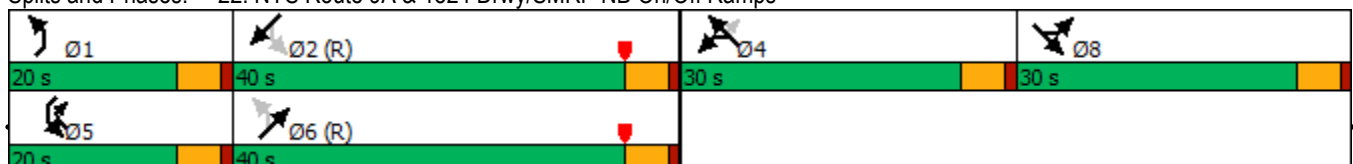


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4	5	1	6		5	2	
Permitted Phases						4	6			2		
Detector Phase	8	8		4	4	5	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	15.0		10.0	15.0	
Total Split (s)	30.0	30.0		30.0	30.0	20.0	20.0	40.0		20.0	40.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%	16.7%	16.7%	33.3%		16.7%	33.3%	
Maximum Green (s)	25.0	25.0		25.0	25.0	15.0	15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag						Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio	0.79	0.75		0.31	0.32	0.15	0.62	0.55		0.23	0.82	
Control Delay	67.8	61.2		61.8	61.8	2.6	25.5	19.6		13.6	40.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	67.8	61.2		61.8	61.8	2.6	25.5	19.6		13.6	40.4	
Queue Length 50th (ft)	167	152		25	25	0	141	268		17	326	
Queue Length 95th (ft)	235	218		56	57	4	258	404		m25	#533	
Internal Link Dist (ft)		131			261			3089			1181	
Turn Bay Length (ft)	150			100		60	230			150		
Base Capacity (vph)	333	336		360	368	335	528	1904		399	1147	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.64	0.61		0.09	0.09	0.10	0.62	0.55		0.16	0.82	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps



2024 Build Traffic Volumes - Sensitivity Analysis - INT #22
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak PM Hour
 12/02/2020



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	311	17	39	44	11	29	288	873	51	56	742	84
Future Volume (veh/h)	311	17	39	44	11	29	288	873	51	56	742	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1753	1753	1753	2254	2254	2254	1939	1834	1834	1909	1714	1714
Adj Flow Rate, veh/h	408	0	0	31	39	33	327	992	58	64	843	95
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	2	15	15
Cap, veh/h	474	249	0	87	91	147	465	2056	120	375	1655	186
Arrive On Green	0.14	0.00	0.00	0.04	0.04	0.04	0.09	0.61	0.61	0.04	0.56	0.56
Sat Flow, veh/h	3339	1753	0	2147	2254	1896	1847	3346	196	1818	2950	332
Grp Volume(v), veh/h	408	0	0	31	39	33	327	517	533	64	465	473
Grp Sat Flow(s),veh/h/ln	1669	1753	0	2147	2254	1896	1847	1743	1799	1818	1628	1654
Q Serve(g_s), s	14.3	0.0	0.0	1.7	2.0	2.0	8.6	19.5	19.5	1.8	21.1	21.1
Cycle Q Clear(g_c), s	14.3	0.0	0.0	1.7	2.0	2.0	8.6	19.5	19.5	1.8	21.1	21.1
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.11	1.00		0.20
Lane Grp Cap(c), veh/h	474	249	0	87	91	147	465	1071	1105	375	913	928
V/C Ratio(X)	0.86	0.00	0.00	0.36	0.43	0.23	0.70	0.48	0.48	0.17	0.51	0.51
Avail Cap(c_a), veh/h	696	365	0	447	470	465	529	1071	1105	535	913	928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	50.3	0.0	0.0	56.1	56.2	52.0	12.8	12.7	12.7	10.9	16.2	16.2
Incr Delay (d2), s/veh	5.2	0.0	0.0	0.9	1.2	0.3	2.7	1.6	1.5	0.1	1.4	1.4
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	6.3	0.0	0.0	0.9	1.2	0.9	3.3	7.3	7.5	0.7	7.6	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	0.0	0.0	57.0	57.4	52.3	15.4	14.2	14.2	10.9	17.6	17.6
LnGrp LOS	E	A	A	E	E	D	B	B	B	B	B	B
Approach Vol, veh/h		408			103			1377			1002	
Approach Delay, s/veh		55.5			55.7			14.5			17.2	
Approach LOS		E			E			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.8	72.3		9.8	9.4	78.7		22.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	35.0		25.0	15.0	35.0		25.0				
Max Q Clear Time (g_c+I1), s	10.6	23.1		4.0	3.8	21.5		16.3				
Green Ext Time (p_c), s	0.3	4.0		0.2	0.0	4.7		0.7				

Intersection Summary

HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

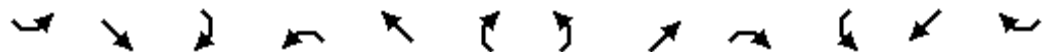
User approved volume balancing among the lanes for turning movement.

2039 Build Traffic Volumes

Weekday Peak AM Hour

22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

12/02/2020



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	590	26	92	40	11	21	87	530	42	57	1129	12
Future Volume (vph)	590	26	92	40	11	21	87	530	42	57	1129	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	11	11	11	11	11	11	11	11
Grade (%)		5%			-9%			-1%			-1%	
Storage Length (ft)	150		0	100		60	230		0	150		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	86			86			86			86		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00				0.99						
Frt		0.960				0.850		0.989			0.998	
Flt Protected	0.950	0.968		0.950	0.972		0.950			0.950		
Satd. Flow (prot)	1530	1506	0	1732	1772	1631	1670	2673	0	1719	3022	0
Flt Permitted	0.950	0.968		0.950	0.972		0.093			0.317		
Satd. Flow (perm)	1528	1505	0	1732	1772	1610	163	2673	0	574	3022	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				64		7			1	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		211			341			3169			1261	
Travel Time (s)		4.8			7.8			48.0			19.1	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	5%	32%	2%	2%	16%	0%
Adj. Flow (vph)	641	28	100	43	12	23	95	576	46	62	1227	13
Shared Lane Traffic (%)	39%			37%								
Lane Group Flow (vph)	391	378	0	27	28	23	95	622	0	62	1240	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)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	0.99	0.99	0.99	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template												
Leading Detector (ft)	35	83		35	83	35	35	83		35	83	
Trailing Detector (ft)	-5	-5		-5	-5	-5	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5	-5	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40	40	40	40		40	40	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	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	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

2039 Build Traffic Volumes

Weekday Peak AM Hour

22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

12/02/2020

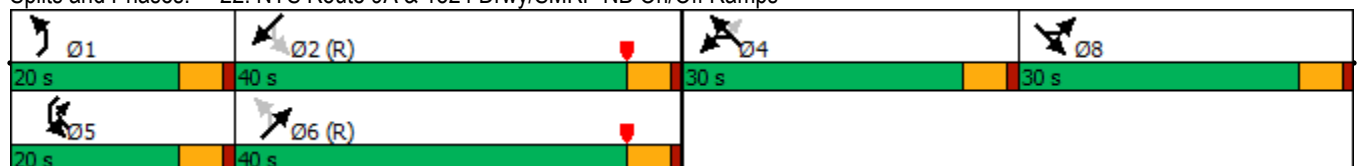


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4	5	1	6		5	2	
Permitted Phases						4	6			2		
Detector Phase	8	8		4	4	5	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	15.0		10.0	15.0	
Total Split (s)	30.0	30.0		30.0	30.0	20.0	20.0	40.0		20.0	40.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%	16.7%	16.7%	33.3%		16.7%	33.3%	
Maximum Green (s)	25.0	25.0		25.0	25.0	15.0	15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag						Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio	0.68	0.65		0.28	0.29	0.10	0.53	0.62		0.21	1.19	
Control Delay	39.5	37.3		61.3	61.3	0.9	30.7	34.4		16.3	121.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	39.5	37.3		61.3	61.3	0.9	30.7	34.4		16.3	121.1	
Queue Length 50th (ft)	270	249		21	22	0	41	207		23	~609	
Queue Length 95th (ft)	410	384		53	54	0	79	282		m23	m#676	
Internal Link Dist (ft)		131			261			3089			1181	
Turn Bay Length (ft)	150			100		60	230			150		
Base Capacity (vph)	578	578		360	369	332	263	1005		404	1043	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.68	0.65		0.07	0.08	0.07	0.36	0.62		0.15	1.19	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps



2039 Build Traffic Volumes
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak AM Hour

12/02/2020

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	590	26	92	40	11	21	87	530	42	57	1129	12
Future Volume (veh/h)	590	26	92	40	11	21	87	530	42	57	1129	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1753	1753	2254	2254	2254	1864	1459	1459	1909	1699	1699
Adj Flow Rate, veh/h	754	0	0	28	34	23	95	576	46	62	1227	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	0	0	0	5	32	32	2	16	16
Cap, veh/h	684	365	0	84	88	144	253	1429	114	471	1786	19
Arrive On Green	0.21	0.00	0.00	0.04	0.04	0.04	0.04	0.55	0.55	0.04	0.55	0.55
Sat Flow, veh/h	3282	1753	0	2147	2254	1896	1776	2600	207	1818	3272	35
Grp Volume(v), veh/h	754	0	0	28	34	23	95	307	315	62	605	635
Grp Sat Flow(s),veh/h/ln	1641	1753	0	2147	2254	1896	1776	1386	1422	1818	1614	1693
Q Serve(g_s), s	25.0	0.0	0.0	1.5	1.8	1.4	2.8	15.4	15.4	1.8	32.7	32.7
Cycle Q Clear(g_c), s	25.0	0.0	0.0	1.5	1.8	1.4	2.8	15.4	15.4	1.8	32.7	32.7
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.15	1.00		0.02
Lane Grp Cap(c), veh/h	684	365	0	84	88	144	253	761	781	471	881	924
V/C Ratio(X)	1.10	0.00	0.00	0.33	0.38	0.16	0.38	0.40	0.40	0.13	0.69	0.69
Avail Cap(c_a), veh/h	684	365	0	447	470	465	404	761	781	632	881	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.19	0.19	0.19
Uniform Delay (d), s/veh	47.5	0.0	0.0	56.1	56.2	51.9	16.5	15.6	15.7	11.9	19.8	19.8
Incr Delay (d2), s/veh	66.0	0.0	0.0	0.9	1.0	0.2	0.3	1.6	1.6	0.0	0.8	0.8
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	16.4	0.0	0.0	0.8	1.0	0.7	1.0	4.8	5.0	0.7	11.4	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.5	0.0	0.0	57.0	57.3	52.1	16.9	17.2	17.2	11.9	20.6	20.6
LnGrp LOS	F	A	A	E	E	D	B	B	B	B	C	C
Approach Vol, veh/h		754			85			717			1302	
Approach Delay, s/veh		113.5			55.8			17.2			20.2	
Approach LOS		F			E			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	70.5		9.7	9.4	70.9		30.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	35.0		25.0	15.0	35.0		25.0				
Max Q Clear Time (g_c+I1), s	4.8	34.7		3.8	3.8	17.4		27.0				
Green Ext Time (p_c), s	0.1	0.2		0.1	0.0	2.9		0.0				

Intersection Summary
























HCM 6th Ctrl Delay	45.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

2039 Build Traffic Volumes - Sensitivity Analysis - INT #22
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak PM Hour
 12/02/2020

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	364	17	39	44	11	29	288	879	51	56	950	84
Future Volume (vph)	364	17	39	44	11	29	288	879	51	56	950	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	11	11	11	11	11	11	11	11
Grade (%)		5%			-9%			-1%			-1%	
Storage Length (ft)	150		0	100		60	230		0	150		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	86			86			86			86		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00				0.99						
Frt		0.972				0.850		0.992			0.988	
Flt Protected	0.950	0.965		0.950	0.971		0.950			0.950		
Satd. Flow (prot)	1560	1541	0	1732	1770	1631	1754	3260	0	1719	3045	0
Flt Permitted	0.950	0.965		0.950	0.971		0.085			0.271		
Satd. Flow (perm)	1558	1539	0	1732	1770	1610	157	3260	0	490	3045	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				64		5			8	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		211			341			3169			1261	
Travel Time (s)		4.8			7.8			48.0			19.1	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	7%	2%	2%	15%	0%
Adj. Flow (vph)	414	19	44	50	13	33	327	999	58	64	1080	95
Shared Lane Traffic (%)	42%			38%								
Lane Group Flow (vph)	240	237	0	31	32	33	327	1057	0	64	1175	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)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	0.99	0.99	0.99	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template												
Leading Detector (ft)	35	83		35	83	35	35	83		35	83	
Trailing Detector (ft)	-5	-5		-5	-5	-5	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5	-5	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40	40	40	40		40	40	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	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	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

2039 Build Traffic Volumes - Sensitivity Analysis - INT #22
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak PM Hour
 12/02/2020

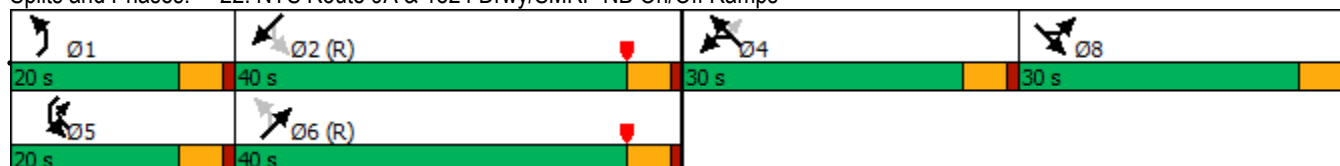


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4	5	1	6		5	2	
Permitted Phases						4	6			2		
Detector Phase	8	8		4	4	5	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	15.0		10.0	15.0	
Total Split (s)	30.0	30.0		30.0	30.0	20.0	20.0	40.0		20.0	40.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%	16.7%	16.7%	33.3%		16.7%	33.3%	
Maximum Green (s)	25.0	25.0		25.0	25.0	15.0	15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag						Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio	0.80	0.78		0.31	0.32	0.15	0.67	0.58		0.24	1.07	
Control Delay	64.9	61.0		61.8	61.8	2.6	35.4	21.8		14.2	79.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	64.9	61.0		61.8	61.8	2.6	35.4	21.8		14.2	79.8	
Queue Length 50th (ft)	188	177		25	25	0	177	285		13	~548	
Queue Length 95th (ft)	256	248		56	57	4	#322	430		m26	#732	
Internal Link Dist (ft)		131			261			3089			1181	
Turn Bay Length (ft)	150			100		60	230			150		
Base Capacity (vph)	345	348		360	368	335	486	1833		390	1095	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.70	0.68		0.09	0.09	0.10	0.67	0.58		0.16	1.07	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps



2039 Build Traffic Volumes - Sensitivity Analysis - INT #22
 22: NYS Route 9A & 1824 Drwy/SMRP NB On/Off Ramps

Weekday Peak PM Hour
 12/02/2020



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	364	17	39	44	11	29	288	879	51	56	950	84
Future Volume (veh/h)	364	17	39	44	11	29	288	879	51	56	950	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1753	1753	1753	2254	2254	2254	1939	1834	1834	1909	1714	1714
Adj Flow Rate, veh/h	469	0	0	31	39	33	327	999	58	64	1080	95
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	2	15	15
Cap, veh/h	534	280	0	87	91	147	374	1997	116	358	1633	144
Arrive On Green	0.16	0.00	0.00	0.04	0.04	0.04	0.09	0.60	0.60	0.04	0.54	0.54
Sat Flow, veh/h	3339	1753	0	2147	2254	1896	1847	3347	194	1818	3029	266
Grp Volume(v), veh/h	469	0	0	31	39	33	327	520	537	64	580	595
Grp Sat Flow(s),veh/h/ln	1669	1753	0	2147	2254	1896	1847	1743	1799	1818	1628	1666
Q Serve(g_s), s	16.5	0.0	0.0	1.7	2.0	2.0	9.0	20.6	20.6	1.9	30.6	30.7
Cycle Q Clear(g_c), s	16.5	0.0	0.0	1.7	2.0	2.0	9.0	20.6	20.6	1.9	30.6	30.7
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.11	1.00		0.16
Lane Grp Cap(c), veh/h	534	280	0	87	91	147	374	1039	1073	358	878	898
V/C Ratio(X)	0.88	0.00	0.00	0.36	0.43	0.23	0.87	0.50	0.50	0.18	0.66	0.66
Avail Cap(c_a), veh/h	696	365	0	447	470	465	431	1039	1073	519	878	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.48	0.48	0.48
Uniform Delay (d), s/veh	49.3	0.0	0.0	56.1	56.2	52.0	20.2	13.9	13.9	12.1	19.8	19.8
Incr Delay (d2), s/veh	8.5	0.0	0.0	0.9	1.2	0.3	14.8	1.7	1.7	0.0	1.9	1.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.0	0.9	1.2	0.9	6.4	7.8	8.1	0.7	11.1	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	0.0	0.0	57.0	57.4	52.3	35.0	15.6	15.6	12.1	21.7	21.7
LnGrp LOS	E	A	A	E	E	D	C	B	B	B	C	C
Approach Vol, veh/h		469			103			1384			1239	
Approach Delay, s/veh		57.8			55.7			20.2			21.2	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	69.7		9.8	9.4	76.6		24.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	35.0		25.0	15.0	35.0		25.0				
Max Q Clear Time (g_c+I1), s	11.0	32.7		4.0	3.9	22.6		18.5				
Green Ext Time (p_c), s	0.2	1.4		0.2	0.0	4.6		0.7				

Intersection Summary

HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.