























Appendix I – Synchro Results

Lanes, Volumes, Timings
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	6	21	44	29	182	95	1709	36	40	1072	104
Future Volume (vph)	48	6	21	44	29	182	95	1709	36	40	1072	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			-4%			0%			-2%	
Storage Length (ft)	0		0	0		0	470		355	470		280
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t			0.850			0.850			0.850			0.850
Fl _t Protected		0.956			0.968			0.950			0.950	
Satd. Flow (prot)	0	1124	1328	0	1750	1584	1703	3374	1455	1585	3198	1539
Fl _t Permitted		0.640			0.743			0.950			0.950	
Satd. Flow (perm)	0	753	1328	0	1343	1584	1703	3374	1455	1585	3198	1539
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			70			239			112			112
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		1253			1187			3553			2951	
Travel Time (s)		34.2			32.4			44.0			36.6	
Peak Hour Factor	0.57	0.75	0.75	0.65	0.81	0.76	0.77	0.91	0.82	0.67	0.83	0.81
Heavy Vehicles (%)	71%	0%	24%	11%	0%	4%	6%	7%	11%	15%	14%	6%
Adj. Flow (vph)	84	8	28	68	36	239	123	1878	44	60	1292	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	28	0	104	239	123	1878	44	60	1292	128
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			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.97	0.97	0.97	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	4	1	1	4	1
Detector Template		Thru	Right		Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)		35	35		35	35	35	406	46	35	406	46
Trailing Detector (ft)		-5	-5		-5	-5	-5	94	40	-5	94	40
Detector 1 Position(ft)		-5	-5		-5	-5	-5	94	40	-5	94	40
Detector 1 Size(ft)		40	40		40	40	40	6	6	40	6	6
Detector 1 Type		Cl+Ex	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	0.0
Detector 1 Queue (s)		0.0	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	0.0
Detector 2 Position(ft)								196			196	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Detector 3 Position(ft)								298			298	

Lanes, Volumes, Timings
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 3 Size(ft)								6			6	
Detector 3 Type								Cl+Ex			Cl+Ex	
Detector 3 Channel												
Detector 3 Extend (s)								0.0			0.0	
Detector 4 Position(ft)								400			400	
Detector 4 Size(ft)								6			6	
Detector 4 Type								Cl+Ex			Cl+Ex	
Detector 4 Channel												
Detector 4 Extend (s)								0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		4			Free			Free
Detector Phase	8	8	8	4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	7.0	20.0		7.0	20.0	
Minimum Split (s)	43.2	43.2	43.2	43.2	43.2	43.2	14.5	34.6		14.9	34.9	
Total Split (s)	43.2	43.2	43.2	43.2	43.2	43.2	37.5	107.6		37.9	108.0	
Total Split (%)	22.9%	22.9%	22.9%	22.9%	22.9%	22.9%	19.9%	57.0%		20.1%	57.2%	
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0	36.0	30.0	100.0		30.0	101.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.7	5.6		4.9	4.9	
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.8	2.0		3.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.2	7.2		7.2	7.2	7.5	7.6		7.9	6.9	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0		4.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		7.0			7.0	
Flash Don't Walk (s)	28.0	28.0	28.0	28.0	28.0	28.0		20.0			20.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)		24.6	24.6		24.6	24.6	18.1	102.9	159.2	12.7	94.6	159.2
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.11	0.65	1.00	0.08	0.59	1.00
v/c Ratio		0.79	0.11		0.50	0.54	0.64	0.86	0.03	0.48	0.68	0.08
Control Delay (s/veh)		108.9	0.8		71.7	11.1	85.1	31.0	0.0	86.9	26.1	0.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		108.9	0.8		71.7	11.1	85.1	31.0	0.0	86.9	26.1	0.1
LOS		F	A		E	B	F	C	A	F	C	A
Approach Delay (s/veh)		83.6			29.5			33.6			26.3	
Approach LOS		F			C			C			C	
90th %ile Green (s)	36.0	36.0	36.0	36.0	36.0	36.0	26.2	107.9		18.3	101.1	
90th %ile Term Code	Max	Max	Max	Hold	Hold	Hold	Gap	Hold		Gap	Max	
70th %ile Green (s)	31.4	31.4	31.4	31.4	31.4	31.4	21.0	100.0		14.8	94.9	
70th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Gap	Max		Gap	Hold	
50th %ile Green (s)	25.5	25.5	25.5	25.5	25.5	25.5	18.0	100.0		12.6	95.7	
50th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Gap	Max		Gap	Hold	
30th %ile Green (s)	20.1	20.1	20.1	20.1	20.1	20.1	15.2	100.0		10.6	96.5	
30th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Gap	Max		Gap	Hold	
10th %ile Green (s)	13.1	13.1	13.1	13.1	13.1	13.1	11.6	100.0		0.0	81.6	
10th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Gap	Max		Skip	Hold	

Lanes, Volumes, Timings
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		94	0		101	0	126	848	0	62	468	0
Queue Length 95th (ft)		144	0		160	28	183	#1243	0	92	614	0
Internal Link Dist (ft)		1173			1107			3473			2871	
Turn Bay Length (ft)							470		355	470		280
Base Capacity (vph)		172	358		308	547	325	2180	1455	303	2061	1539
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.53	0.08		0.34	0.44	0.38	0.86	0.03	0.20	0.63	0.08

Intersection Summary

Area Type:	Other
Cycle Length:	188.7
Actuated Cycle Length:	159.2
Natural Cycle:	145
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.86
Intersection Signal Delay (s/veh):	32.0
Intersection LOS:	C
Intersection Capacity Utilization:	85.2%
ICU Level of Service:	E
Analysis Period (min):	15
90th %ile Actuated Cycle:	184.9
70th %ile Actuated Cycle:	168.9
50th %ile Actuated Cycle:	160.8
30th %ile Actuated Cycle:	153.4
10th %ile Actuated Cycle:	127.9
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Splits and Phases: 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Ø1 37.5 s	Ø2 108 s	Ø4 43.2 s
Ø5 37.9 s	Ø6 107.6 s	Ø8 43.2 s

HCM Signalized Intersection Capacity Analysis
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕	↗		↕	↗	↘	↕↕	↗	↘	↕↕	↗	
Traffic Volume (vph)	48	6	21	44	29	182	95	1709	36	40	1072	104	
Future Volume (vph)	48	6	21	44	29	182	95	1709	36	40	1072	104	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		-4%			-4%			0%				-2%	
Total Lost time (s)		7.2	7.2		7.2	7.2	7.5	7.6	4.0	7.9	6.9	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Fr _t		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Fl _t Protected		0.96	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1124	1328		1751	1584	1703	3374	1455	1585	3198	1539	
Fl _t Permitted		0.64	1.00		0.74	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)		752	1328		1344	1584	1703	3374	1455	1585	3198	1539	
Peak-hour factor, PHF	0.57	0.75	0.75	0.65	0.81	0.76	0.77	0.91	0.82	0.67	0.83	0.81	
Adj. Flow (vph)	84	8	28	68	36	239	123	1878	44	60	1292	128	
RTOR Reduction (vph)	0	0	24	0	0	202	0	0	0	0	0	0	
Lane Group Flow (vph)	0	92	4	0	104	37	123	1878	44	60	1292	128	
Heavy Vehicles (%)	71%	0%	24%	11%	0%	4%	6%	7%	11%	15%	14%	6%	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases		8			4		1	6		5		2	
Permitted Phases	8		8	4		4			Free			Free	
Actuated Green, G (s)		24.6	24.6		24.6	24.6	18.1	102.9	160.8	10.6	96.5	160.8	
Effective Green, g (s)		24.6	24.6		24.6	24.6	18.1	102.9	160.8	10.6	96.5	160.8	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.11	0.64	1.00	0.07	0.60	1.00	
Clearance Time (s)		7.2	7.2		7.2	7.2	7.5	7.6		7.9	6.9		
Vehicle Extension (s)		3.0	3.0		3.0	3.0	4.0	3.0		4.0	3.0		
Lane Grp Cap (vph)		115	203		205	242	191	2159	1455	104	1919	1539	
v/s Ratio Prot							c0.07	c0.56		0.04	0.40		
v/s Ratio Perm		c0.12	0.00		0.08	0.02			0.03			0.08	
v/c Ratio		0.80	0.02		0.51	0.15	0.64	0.87	0.03	0.58	0.67	0.08	
Uniform Delay, d ₁		65.7	57.9		62.5	59.0	68.3	23.5	0.0	72.9	21.6	0.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d ₂		31.5	0.0		2.0	0.3	8.1	4.0	0.0	9.0	0.9	0.1	
Delay (s)		97.3	57.9		64.5	59.3	76.3	27.6	0.0	81.9	22.5	0.1	
Level of Service		F	E		E	E	E	C	A	F	C	A	
Approach Delay (s/veh)		88.1			60.9			29.9			23.0		
Approach LOS		F			E			C			C		
Intersection Summary													
HCM 2000 Control Delay (s/veh)			31.7									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			160.8									Sum of lost time (s)	22.7
Intersection Capacity Utilization			85.2%									ICU Level of Service	E
Analysis Period (min)			15										

c Critical Lane Group

Lanes, Volumes, Timings
 2: Harry J. Parrish Blvd & Clover Hill Rd














Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↑	↗	↖	↗
Traffic Volume (vph)	54	3	0	21	50	178
Future Volume (vph)	54	3	0	21	50	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t				0.850		0.850
Fl _t Protected		0.956			0.950	
Satd. Flow (prot)	0	1100	1900	1615	1805	1509
Fl _t Permitted		0.956			0.950	
Satd. Flow (perm)	0	1100	1900	1615	1805	1509
Link Speed (mph)		35	35		25	
Link Distance (ft)		4575	551		1253	
Travel Time (s)		89.1	10.7		34.2	
Peak Hour Factor	0.50	0.38	0.88	0.42	0.89	0.79
Heavy Vehicles (%)	70%	0%	0%	0%	0%	7%
Adj. Flow (vph)	108	8	0	50	56	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	116	0	50	56	225
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Stop	Stop		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 2: Harry J. Parrish Blvd & Clover Hill Rd

Manassas HEF EA
 09/09/2025

						
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	54	3	0	21	50	178
Future Volume (Veh/h)	54	3	0	21	50	178
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.38	0.88	0.42	0.89	0.79
Hourly flow rate (vph)	108	8	0	50	56	225
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	1253					
pX, platoon unblocked						
vC, conflicting volume	112	112	112	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112	112	112	0	0	
tC, single (s)	7.8	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	4.1	4.0	4.0	3.3	2.2	
p0 queue free %	84	99	100	95	97	
cM capacity (veh/h)	677	755	755	1091	1636	
Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2	
Volume Total	116	0	50	56	225	
Volume Left	108	0	0	56	0	
Volume Right	0	0	50	0	225	
cSH	682	1700	1091	1636	1700	
Volume to Capacity	0.17	0.00	0.05	0.03	0.13	
Queue Length 95th (ft)	15	0	4	3	0	
Control Delay (s/veh)	11.4	0.0	8.5	7.3	0.0	
Lane LOS	B	A	A	A		
Approach Delay (s/veh)	11.4	8.5		1.5		
Approach LOS	B	A				
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization			14.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
 3: Parking Lot/Harry J. Parrish Blvd

Manassas HEF EA
 09/09/2025



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	1	0	1	11	10	83	3	7	1	40	5	1
Future Volume (vph)	1	0	1	11	10	83	3	7	1	40	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Fr _t		0.932			0.906			0.977			0.992	
Fl _t Protected		0.976			0.993			0.984			0.966	
Satd. Flow (prot)	0	1728	0	0	1663	0	0	1827	0	0	1738	0
Fl _t Permitted		0.976			0.993			0.984			0.966	
Satd. Flow (perm)	0	1728	0	0	1663	0	0	1827	0	0	1738	0
Link Speed (mph)		20			35			35			35	
Link Distance (ft)		296			4575			313			332	
Travel Time (s)		10.1			89.1			6.1			6.5	
Peak Hour Factor	0.25	0.88	0.25	0.50	0.42	0.80	0.38	0.58	0.25	0.86	0.31	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	20%	0%
Adj. Flow (vph)	4	0	4	22	24	104	8	12	4	47	16	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	150	0	0	24	0	0	67	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 3: Parking Lot/Harry J. Parrish Blvd

Manassas HEF EA
 09/09/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	11	10	83	3	7	1	40	5	1
Future Volume (Veh/h)	1	0	1	11	10	83	3	7	1	40	5	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.88	0.25	0.50	0.42	0.80	0.38	0.58	0.25	0.86	0.31	0.25
Hourly flow rate (vph)	4	0	4	22	24	104	8	12	4	47	16	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	154	144	18	146	144	14	20			16		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	154	144	18	146	144	14	20			16		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	97	97	90	100			97		
cM capacity (veh/h)	700	725	1066	803	725	1060	1609			1615		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	8	150	24	67								
Volume Left	4	22	8	47								
Volume Right	4	104	4	4								
cSH	845	946	1609	1615								
Volume to Capacity	0.00*	0.16	0.00*	0.03								
Queue Length 95th (ft)	1	14	0	2								
Control Delay (s/veh)	9.3	9.5	2.4	5.2								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	9.3	9.5	2.4	5.2								
Approach LOS	A	A										
Intersection Summary												
Average Delay			7.7									
Intersection Capacity Utilization			19.7%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	11	10	83	3	7	1	40	5	1
Future Vol, veh/h	1	0	1	11	10	83	3	7	1	40	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	88	25	50	42	80	38	58	25	86	31	25
Heavy Vehicles, %	0	0	0	0	0	4	0	0	0	0	20	0
Mvmt Flow	4	0	4	22	24	104	8	12	4	47	16	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	154	144	18	144	144	14	20	0	0	16	0	0
Stage 1	112	112	-	30	30	-	-	-	-	-	-	-
Stage 2	42	32	-	114	114	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.336	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	817	751	1066	830	751	1060	1609	-	-	1615	-	-
Stage 1	898	807	-	992	874	-	-	-	-	-	-	-
Stage 2	978	872	-	896	805	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	700	725	1066	805	725	1060	1609	-	-	1615	-	-
Mov Cap-2 Maneuver	700	725	-	805	725	-	-	-	-	-	-	-
Stage 1	894	784	-	987	870	-	-	-	-	-	-	-
Stage 2	854	868	-	867	782	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	9.3		7.6		2.4		5.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1609	-	-	845	1528	1615	-	-
HCM Lane V/C Ratio	0.005	-	-	0.009	0.098	0.029	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	9.3	7.6	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.3	0.1	-	-

Lanes, Volumes, Timings
4: Wakeman Dr & Frontage Rd Exit



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	1	0	5	17	0
Future Volume (vph)	6	1	0	5	17	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.850					
Fl _t Protected	0.950					
Satd. Flow (prot)	1805	1615	0	1900	1792	0
Fl _t Permitted	0.950					
Satd. Flow (perm)	1805	1615	0	1900	1792	0
Link Speed (mph)	20			35	35	
Link Distance (ft)	393			735	313	
Travel Time (s)	13.4			14.3	6.1	
Peak Hour Factor	0.31	0.25	0.88	0.31	0.60	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	6%	0%
Adj. Flow (vph)	19	4	0	16	28	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	4	0	16	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
4: Wakeman Dr & Frontage Rd Exit

Manassas HEF EA
09/09/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	1	0	5	17	0
Future Volume (Veh/h)	6	1	0	5	17	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.31	0.25	0.88	0.31	0.60	0.88
Hourly flow rate (vph)	19	4	0	16	28	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	44	28	28			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	44	28	28			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	972	1053	1599			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	19	4	16	28		
Volume Left	19	0	0	0		
Volume Right	0	4	0	0		
cSH	972	1053	1700	1700		
Volume to Capacity	0.02	0.00*	0.00*	0.02		
Queue Length 95th (ft)	1	0	0	0		
Control Delay (s/veh)	8.8	8.4	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	8.7		0.0	0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

* Value less than 0.01.

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	6	1	0	5	17	0
Future Vol, veh/h	6	1	0	5	17	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	31	25	88	31	60	88
Heavy Vehicles, %	0	0	0	0	6	0
Mvmt Flow	19	4	0	16	28	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	44	28	-	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	16	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	972	1053	0	-	-	0
Stage 1	1000	-	0	-	-	0
Stage 2	1012	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	972	1053	-	-	-	-
Mov Cap-2 Maneuver	972	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	972	1053	-
HCM Lane V/C Ratio	-	0.02	0.004	-
HCM Ctrl Dly (s/v)	-	8.8	8.4	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q (veh)	-	0.1	0	-

Lanes, Volumes, Timings
5: Frontage Rd Entrance & Wakeman Dr

Manassas HEF EA
09/09/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	0	11	80	46	18
Future Volume (vph)	7	0	11	80	46	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			165
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t						0.850
Fl _t Protected	0.950			0.992		
Satd. Flow (prot)	1399	0	0	1814	1863	1524
Fl _t Permitted	0.950			0.992		
Satd. Flow (perm)	1399	0	0	1814	1863	1524
Link Speed (mph)	20			35	35	
Link Distance (ft)	189			332	652	
Travel Time (s)	6.4			6.5	12.7	
Peak Hour Factor	0.44	0.88	0.58	0.77	0.94	0.75
Heavy Vehicles (%)	29%	0%	9%	3%	2%	6%
Adj. Flow (vph)	16	0	19	104	49	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	123	49	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
5: Frontage Rd Entrance & Wakeman Dr

Manassas HEF EA
09/09/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	0	11	80	46	18
Future Volume (Veh/h)	7	0	11	80	46	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.44	0.88	0.58	0.77	0.94	0.75
Hourly flow rate (vph)	16	0	19	104	49	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	191	49	73			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	191	49	73			
tC, single (s)	6.7	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.3			
p0 queue free %	98	100	99			
cM capacity (veh/h)	731	1025	1483			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	16	123	49	24		
Volume Left	16	19	0	0		
Volume Right	0	0	0	24		
cSH	731	1483	1700	1700		
Volume to Capacity	0.02	0.01	0.03	0.01		
Queue Length 95th (ft)	2	1	0	0		
Control Delay (s/veh)	10.0	1.2	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s/veh)	10.0	1.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	1.5					
Intersection Capacity Utilization	21.5%			ICU Level of Service	A	
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	↑	↑
Traffic Vol, veh/h	7	0	11	80	46	18
Future Vol, veh/h	7	0	11	80	46	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	165
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	44	88	58	77	94	75
Heavy Vehicles, %	29	0	9	3	2	6
Mvmt Flow	16	0	19	104	49	24

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	191	49	73	0	0
Stage 1	49	-	-	-	-
Stage 2	142	-	-	-	-
Critical Hdwy	6.69	6.2	4.19	-	-
Critical Hdwy Stg 1	5.69	-	-	-	-
Critical Hdwy Stg 2	5.69	-	-	-	-
Follow-up Hdwy	3.761	3.3	2.281	-	-
Pot Cap-1 Maneuver	740	1025	1483	-	-
Stage 1	909	-	-	-	-
Stage 2	823	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	730	1025	1483	-	-
Mov Cap-2 Maneuver	730	-	-	-	-
Stage 1	896	-	-	-	-
Stage 2	823	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1483	-	730	-	-
HCM Lane V/C Ratio	0.013	-	0.022	-	-
HCM Ctrl Dly (s/v)	7.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Lanes, Volumes, Timings
6: Wakeman Dr & Observation Rd

Manassas HEF EA
09/09/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	42	30	48	48	31
Future Volume (vph)	33	42	30	48	48	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0	145			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.935	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1612	1615	1752	1827	1716	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1612	1615	1752	1827	1716	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	671			989	700	
Travel Time (s)	13.1			19.3	13.6	
Peak Hour Factor	0.41	0.72	0.58	0.73	0.80	0.56
Heavy Vehicles (%)	12%	0%	3%	4%	4%	3%
Adj. Flow (vph)	80	58	52	66	60	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	58	52	66	115	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	18.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
6: Wakeman Dr & Observation Rd

Manassas HEF EA
09/09/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	42	30	48	48	31
Future Volume (Veh/h)	33	42	30	48	48	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.41	0.72	0.58	0.73	0.80	0.56
Hourly flow rate (vph)	80	58	52	66	60	55
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	258	88	115			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	258	88	115			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	88	94	96			
cM capacity (veh/h)	685	976	1468			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	80	58	52	66	115	
Volume Left	80	0	52	0	0	
Volume Right	0	58	0	0	55	
cSH	685	976	1468	1700	1700	
Volume to Capacity	0.12	0.06	0.04	0.04	0.07	
Queue Length 95th (ft)	10	5	3	0	0	
Control Delay (s/veh)	10.9	8.9	7.5	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	10.1		3.3		0.0	
Approach LOS	B					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization			18.3%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	33	42	30	48	48	31
Future Vol, veh/h	33	42	30	48	48	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	105	0	145	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	41	72	58	73	80	56
Heavy Vehicles, %	12	0	3	4	4	3
Mvmt Flow	80	58	52	66	60	55

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	258	88	115	0	0
Stage 1	88	-	-	-	-
Stage 2	170	-	-	-	-
Critical Hdwy	6.52	6.2	4.13	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-
Follow-up Hdwy	3.608	3.3	2.227	-	-
Pot Cap-1 Maneuver	710	976	1468	-	-
Stage 1	911	-	-	-	-
Stage 2	836	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	685	976	1468	-	-
Mov Cap-2 Maneuver	685	-	-	-	-
Stage 1	879	-	-	-	-
Stage 2	836	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.1	3.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1468	-	685	976	-	-
HCM Lane V/C Ratio	0.035	-	0.118	0.06	-	-
HCM Ctrl Dly (s/v)	7.5	-	11	8.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.1	-	0.4	0.2	-	-

Lanes, Volumes, Timings
8: Piper Ln/Observation Rd










						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	20	57	20	10	31
Future Volume (vph)	20	20	57	20	10	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.971			
Flt Protected	0.976					0.979
Satd. Flow (prot)	1728	0	1723	0	0	1860
Flt Permitted	0.976					0.979
Satd. Flow (perm)	1728	0	1723	0	0	1860
Link Speed (mph)	25		35			35
Link Distance (ft)	612		1029			688
Travel Time (s)	16.7		20.0			13.4
Peak Hour Factor	0.88	0.88	0.68	0.88	0.25	0.60
Heavy Vehicles (%)	0%	0%	9%	0%	0%	0%
Adj. Flow (vph)	23	23	84	23	40	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	107	0	0	92
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.9%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 8: Piper Ln/Observation Rd

Manassas HEF EA
 09/09/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	20	57	20	10	31
Future Volume (Veh/h)	20	20	57	20	10	31
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.68	0.88	0.25	0.60
Hourly flow rate (vph)	23	23	84	23	40	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	228	96			107	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	228	96			107	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	98			97	
cM capacity (veh/h)	745	967			1497	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	46	107	92			
Volume Left	23	0	40			
Volume Right	23	23	0			
cSH	841	1700	1497			
Volume to Capacity	0.05	0.06	0.03			
Queue Length 95th (ft)	4	0	2			
Control Delay (s/veh)	9.5	0.0	3.4			
Lane LOS	A		A			
Approach Delay (s/veh)	9.5	0.0	3.4			
Approach LOS	A					
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization			18.9%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	20	20	57	20	10	31
Future Vol, veh/h	20	20	57	20	10	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	68	88	25	60
Heavy Vehicles, %	0	0	9	0	0	0
Mvmt Flow	23	23	84	23	40	52

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	228	96	0	0	107	0
Stage 1	96	-	-	-	-	-
Stage 2	132	-	-	-	-	-
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	765	966	-	-	1497	-
Stage 1	933	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	744	966	-	-	1497	-
Mov Cap-2 Maneuver	744	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	874	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.5	0	3.3
HCM LOS	A		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	841	1497
HCM Lane V/C Ratio	-	-	0.054	0.027
HCM Ctrl Dly (s/v)	-	-	9.5	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.2	0.1

Lanes, Volumes, Timings
 12: Wakeman Dr & S Satellite Driveway

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	87	0	0	64
Future Volume (vph)	0	0	87	0	0	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr						
Flt Protected						
Satd. Flow (prot)	1900	0	1810	0	0	1845
Flt Permitted						
Satd. Flow (perm)	1900	0	1810	0	0	1845
Link Speed (mph)	20		35			35
Link Distance (ft)	455		652			568
Travel Time (s)	15.5		12.7			11.1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	5%	0%	0%	3%
Adj. Flow (vph)	0	0	99	0	0	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	99	0	0	73
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	7.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 12: Wakeman Dr & S Satellite Driveway

Manassas HEF EA
 09/09/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	87	0	0	64
Future Volume (Veh/h)	0	0	87	0	0	64
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	0	99	0	0	73
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	172	99			99	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172	99			99	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	823	962			1507	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	99	73			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1507			
Volume to Capacity	0.00	0.06	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			7.9%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	0	0	87	0	0	64
Future Vol, veh/h	0	0	87	0	0	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	5	0	0	3
Mvmt Flow	0	0	99	0	0	73

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	172	99	0	0	99
Stage 1	99	-	-	-	-
Stage 2	73	-	-	-	-
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	823	962	-	-	1507
Stage 1	930	-	-	-	-
Stage 2	955	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	823	962	-	-	1507
Mov Cap-2 Maneuver	823	-	-	-	-
Stage 1	930	-	-	-	-
Stage 2	955	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1507
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	-	0

Lanes, Volumes, Timings
 13: Wakeman Dr & N Satellite Driveway

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	87	0	0	64
Future Volume (vph)	0	0	87	0	0	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr						
Flt Protected						
Satd. Flow (prot)	1900	0	1810	0	0	1845
Flt Permitted						
Satd. Flow (perm)	1900	0	1810	0	0	1845
Link Speed (mph)	20		35			35
Link Distance (ft)	404		568			681
Travel Time (s)	13.8		11.1			13.3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	5%	0%	0%	3%
Adj. Flow (vph)	0	0	99	0	0	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	99	0	0	73
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	7.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 13: Wakeman Dr & N Satellite Driveway

Manassas HEF EA
 09/09/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	87	0	0	64
Future Volume (Veh/h)	0	0	87	0	0	64
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	0	99	0	0	73
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	172	99			99	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172	99			99	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	823	962			1507	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	99	73			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1507			
Volume to Capacity	0.00	0.06	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			7.9%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			A
Traffic Vol, veh/h	0	0	87	0	0	64
Future Vol, veh/h	0	0	87	0	0	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	5	0	0	3
Mvmt Flow	0	0	99	0	0	73

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	172	99	0	0	99
Stage 1	99	-	-	-	-
Stage 2	73	-	-	-	-
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	823	962	-	-	1507
Stage 1	930	-	-	-	-
Stage 2	955	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	823	962	-	-	1507
Mov Cap-2 Maneuver	823	-	-	-	-
Stage 1	930	-	-	-	-
Stage 2	955	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1507
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	-	0



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	26	64	78	9	0	0
Future Volume (vph)	26	64	78	9	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.986				
Fl _t Protected		0.986				
Satd. Flow (prot)	0	1834	1793	0	1900	0
Fl _t Permitted		0.986				
Satd. Flow (perm)	0	1834	1793	0	1900	0
Link Speed (mph)		35	35		20	
Link Distance (ft)		989	681		412	
Travel Time (s)		19.3	13.3		14.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	3%	5%	0%	0%	0%
Adj. Flow (vph)	30	73	89	10	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	103	99	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.8%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 14: Wakeman Dr & Employee Lot

Manassas HEF EA
 09/09/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕		↕	
Traffic Volume (veh/h)	26	64	78	9	0	0
Future Volume (Veh/h)	26	64	78	9	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	30	73	89	10	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	99				227	94
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	99				227	94
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	1507				750	968
Direction, Lane #	SE 1	NW 1	SW 1			
Volume Total	103	99	0			
Volume Left	30	0	0			
Volume Right	0	10	0			
cSH	1507	1700	1700			
Volume to Capacity	0.02	0.06	0.00			
Queue Length 95th (ft)	2	0	0			
Control Delay (s/veh)	2.3	0.0	0.0			
Lane LOS	A		A			
Approach Delay (s/veh)	2.3	0.0	0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization		14.8%		ICU Level of Service		A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	1.1					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	26	64	78	9	0	0
Future Vol, veh/h	26	64	78	9	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	3	5	0	0	0
Mvmt Flow	30	73	89	10	0	0




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	99	0	-	0	227 94
Stage 1	-	-	-	-	94 -
Stage 2	-	-	-	-	133 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1507	-	-	-	766 968
Stage 1	-	-	-	-	935 -
Stage 2	-	-	-	-	898 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1507	-	-	-	750 968
Mov Cap-2 Maneuver	-	-	-	-	750 -
Stage 1	-	-	-	-	915 -
Stage 2	-	-	-	-	898 -

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	2.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1507	-
HCM Lane V/C Ratio	-	-	0.02	-
HCM Ctrl Dly (s/v)	-	-	7.4	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.1	-

Lanes, Volumes, Timings
15: Gateway Blvd & Carolina Dr

Manassas HEF EA
09/09/2025




















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	16	2	1	60	29	0	0	2	11	0	46
Future Volume (vph)	17	16	2	1	60	29	0	0	2	11	0	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.935			0.865				0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1703	3183	0	1805	3240	0	0	1644	0	0	1656	1509
Flt Permitted	0.950			0.950							0.950	
Satd. Flow (perm)	1703	3183	0	1805	3240	0	0	1644	0	0	1656	1509
Link Speed (mph)		35			35			25				25
Link Distance (ft)		1357			2771			405				407
Travel Time (s)		26.4			54.0			11.0				11.1
Peak Hour Factor	0.61	0.44	0.50	0.25	0.88	0.56	0.88	0.88	0.50	0.69	0.88	0.55
Heavy Vehicles (%)	6%	13%	0%	0%	2%	7%	0%	0%	0%	9%	0%	7%
Adj. Flow (vph)	28	36	4	4	68	52	0	0	4	16	0	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	40	0	4	120	0	0	4	0	0	16	84
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)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 15: Gateway Blvd & Carolina Dr

Manassas HEF EA
 09/09/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	16	2	1	60	29	0	0	2	11	0	46
Future Volume (Veh/h)	17	16	2	1	60	29	0	0	2	11	0	46
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.61	0.44	0.50	0.25	0.88	0.56	0.88	0.88	0.50	0.69	0.88	0.55
Hourly flow rate (vph)	28	36	4	4	68	52	0	0	4	16	0	84
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	120			40			178	222	20	180	198	60
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	120			40			178	222	20	180	198	60
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.7	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.6	4.0	3.4
p0 queue free %	98			100			100	100	100	98	100	91
cM capacity (veh/h)	1437			1583			695	665	1060	731	686	977
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	28	24	16	4	45	75	4	100				
Volume Left	28	0	0	4	0	0	0	16				
Volume Right	0	0	4	0	0	52	4	84				
cSH	1437	1700	1700	1583	1700	1700	1060	1163				
Volume to Capacity	0.02	0.01	0.00*	0.00*	0.03	0.04	0.00*	0.09				
Queue Length 95th (ft)	1	0	0	0	0	0	0	7				
Control Delay (s/veh)	7.6	0.0	0.0	7.3	0.0	0.0	8.4	9.2				
Lane LOS	A			A			A	A				
Approach Delay (s/veh)	3.1			0.2			8.4	9.2				
Approach LOS							A	A				
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			21.6%		ICU Level of Service			A				
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕			↕	↗
Traffic Vol, veh/h	17	16	2	1	60	29	0	0	2	11	0	46
Future Vol, veh/h	17	16	2	1	60	29	0	0	2	11	0	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	61	44	50	25	88	56	88	88	50	69	88	55
Heavy Vehicles, %	6	13	0	0	2	7	0	0	0	9	0	7
Mvmt Flow	28	36	4	4	68	52	0	0	4	16	0	84























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	120	0	0	40	0	0	136	222	20	176	198	60
Stage 1	-	-	-	-	-	-	94	94	-	102	102	-
Stage 2	-	-	-	-	-	-	42	128	-	74	96	-
Critical Hdwy	4.22	-	-	4.1	-	-	7.5	6.5	6.9	7.68	6.5	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.68	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.68	5.5	-
Follow-up Hdwy	2.26	-	-	2.2	-	-	3.5	4	3.3	3.59	4	3.37
Pot Cap-1 Maneuver	1437	-	-	1583	-	-	827	680	1060	751	701	977
Stage 1	-	-	-	-	-	-	908	821	-	873	815	-
Stage 2	-	-	-	-	-	-	973	794	-	907	819	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1437	-	-	1583	-	-	743	665	1060	736	686	977
Mov Cap-2 Maneuver	-	-	-	-	-	-	743	665	-	736	686	-
Stage 1	-	-	-	-	-	-	891	805	-	856	813	-
Stage 2	-	-	-	-	-	-	887	792	-	886	803	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	3.1		0.2		8.4		9.2	
HCM LOS					A		A	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1060	1437	-	-	1583	-	-	736	977
HCM Lane V/C Ratio	0.004	0.019	-	-	0.003	-	-	0.022	0.086
HCM Ctrl Dly (s/v)	8.4	7.6	-	-	7.3	-	-	10	9
HCM Lane LOS	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0	0.1	-	-	0	-	-	0.1	0.3

Lanes, Volumes, Timings
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	21	77	49	10	115	23	1415	50	155	1916	22
Future Volume (vph)	67	21	77	49	10	115	23	1415	50	155	1916	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			-4%			0%			-2%	
Storage Length (ft)	0		0	0		0	470		355	470		280
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t			0.850				0.850			0.850		0.850
Fl _t Protected		0.964			0.966			0.950			0.950	
Satd. Flow (prot)	0	1775	1584	0	1795	1599	1736	3195	1369	1805	3408	1284
Fl _t Permitted		0.726			0.645			0.950			0.950	
Satd. Flow (perm)	0	1337	1584	0	1199	1599	1736	3195	1369	1805	3408	1284
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			117			140			113			113
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		1256			1187			3553			2950	
Travel Time (s)		34.3			32.4			44.0			36.6	
Peak Hour Factor	0.80	0.75	0.66	0.82	0.42	0.82	0.58	0.96	0.83	0.95	0.92	0.50
Heavy Vehicles (%)	7%	0%	4%	2%	10%	3%	4%	13%	18%	1%	7%	27%
Adj. Flow (vph)	84	28	117	60	24	140	40	1474	60	163	2083	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	112	117	0	84	140	40	1474	60	163	2083	44
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			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.97	0.97	0.97	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	4	1	1	4	1
Detector Template		Thru	Right		Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)		35	35		35	35	35	406	46	35	406	46
Trailing Detector (ft)		-5	-5		-5	-5	-5	94	40	-5	94	40
Detector 1 Position(ft)		-5	-5		-5	-5	-5	94	40	-5	94	40
Detector 1 Size(ft)		40	40		40	40	40	6	6	40	6	6
Detector 1 Type		Cl+Ex	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	0.0
Detector 1 Queue (s)		0.0	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	0.0
Detector 2 Position(ft)								196			196	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Detector 3 Position(ft)								298			298	

Lanes, Volumes, Timings
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 3 Size(ft)								6			6	
Detector 3 Type								Cl+Ex			Cl+Ex	
Detector 3 Channel												
Detector 3 Extend (s)								0.0			0.0	
Detector 4 Position(ft)								400			400	
Detector 4 Size(ft)								6			6	
Detector 4 Type								Cl+Ex			Cl+Ex	
Detector 4 Channel												
Detector 4 Extend (s)								0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		4			Free			Free
Detector Phase	8	8	8	4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	7.0	20.0		7.0	20.0	
Minimum Split (s)	43.2	43.2	43.2	43.2	43.2	43.2	14.5	34.6		14.9	34.9	
Total Split (s)	43.2	43.2	43.2	43.2	43.2	43.2	37.5	107.6		37.9	108.0	
Total Split (%)	22.9%	22.9%	22.9%	22.9%	22.9%	22.9%	19.9%	57.0%		20.1%	57.2%	
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0	36.0	30.0	100.0		30.0	100.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.7	5.6		4.9	5.9	
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.8	2.0		3.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.2	7.2		7.2	7.2	7.5	7.6		7.9	7.9	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0		4.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		7.0			7.0	
Flash Don't Walk (s)	28.0	28.0	28.0	28.0	28.0	28.0		20.0			20.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)		18.9	18.9		18.9	18.9	10.3	92.5	155.0	20.6	106.5	155.0
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.07	0.60	1.00	0.13	0.69	1.00
v/c Ratio		0.69	0.40		0.58	0.44	0.35	0.77	0.04	0.68	0.89	0.03
Control Delay (s/veh)		89.3	14.2		82.7	13.8	82.8	28.6	0.1	80.7	28.0	0.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		89.3	14.2		82.7	13.8	82.8	28.6	0.1	80.7	28.0	0.0
LOS		F	B		F	B	F	C	A	F	C	A
Approach Delay (s/veh)		50.9			39.6			28.9			31.2	
Approach LOS		D			D			C			C	
90th %ile Green (s)	28.5	28.5	28.5	28.5	28.5	28.5	14.2	100.0		29.4	115.3	
90th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Gap	Max		Gap	Hold	
70th %ile Green (s)	22.8	22.8	22.8	22.8	22.8	22.8	11.9	100.0		24.2	112.4	
70th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Gap	Max		Gap	Hold	
50th %ile Green (s)	19.2	19.2	19.2	19.2	19.2	19.2	10.3	89.3		21.0	100.1	
50th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Gap	Hold		Gap	Max	
30th %ile Green (s)	15.5	15.5	15.5	15.5	15.5	15.5	8.7	91.2		17.5	100.1	
30th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Gap	Hold		Gap	Max	
10th %ile Green (s)	10.6	10.6	10.6	10.6	10.6	10.6	0.0	79.7		12.8	100.1	
10th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Skip	Hold		Gap	Max	

Lanes, Volumes, Timings
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		108	0		80	0	39	568	0	156	904	0
Queue Length 95th (ft)		163	12		68	48	57	852	0	267	#1306	0
Internal Link Dist (ft)		1176			1107			3473			2870	
Turn Bay Length (ft)							470		355	470		280
Base Capacity (vph)		315	462		282	484	341	2093	1369	354	2341	1284
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.36	0.25		0.30	0.29	0.12	0.70	0.04	0.46	0.89	0.03

Intersection Summary























Area Type:	Other
Cycle Length:	188.7
Actuated Cycle Length:	155
Natural Cycle:	145
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.89
Intersection Signal Delay (s/veh):	31.9
Intersection LOS:	C
Intersection Capacity Utilization:	89.1%
ICU Level of Service:	E
Analysis Period (min):	15
90th %ile Actuated Cycle:	180.6
70th %ile Actuated Cycle:	169.7
50th %ile Actuated Cycle:	152.2
30th %ile Actuated Cycle:	146.9
10th %ile Actuated Cycle:	125.8
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: PW Pkwy (234 By-Pass) & Clover Hill Rd



HCM Signalized Intersection Capacity Analysis
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	67	21	77	49	10	115	23	1415	50	155	1916	22		
Future Volume (vph)	67	21	77	49	10	115	23	1415	50	155	1916	22		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Grade (%)		-4%			-4%			0%				-2%		
Total Lost time (s)		7.2	7.2		7.2	7.2	7.5	7.6	4.0	7.9	7.9	4.0		
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Fr _t		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		
Fl _t Protected		0.96	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00		
Satd. Flow (prot)		1775	1584		1794	1599	1736	3195	1369	1805	3408	1284		
Fl _t Permitted		0.73	1.00		0.64	1.00	0.95	1.00	1.00	0.95	1.00	1.00		
Satd. Flow (perm)		1336	1584		1198	1599	1736	3195	1369	1805	3408	1284		
Peak-hour factor, PHF	0.80	0.75	0.66	0.82	0.42	0.82	0.58	0.96	0.83	0.95	0.92	0.50		
Adj. Flow (vph)	84	28	117	60	24	140	40	1474	60	163	2083	44		
RTOR Reduction (vph)	0	0	103	0	0	123	0	0	0	0	0	0		
Lane Group Flow (vph)	0	112	14	0	84	17	40	1474	60	163	2083	44		
Heavy Vehicles (%)	7%	0%	4%	2%	10%	3%	4%	13%	18%	1%	7%	27%		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Free	Prot	NA	Free		
Protected Phases		8			4		1	6		5		2		
Permitted Phases	8		8	4		4			Free			Free		
Actuated Green, G (s)		18.9	18.9		18.9	18.9	8.5	94.3	156.5	20.6	106.5	156.5		
Effective Green, g (s)		18.9	18.9		18.9	18.9	8.5	94.3	156.5	20.6	106.5	156.5		
Actuated g/C Ratio		0.12	0.12		0.12	0.12	0.05	0.60	1.00	0.13	0.68	1.00		
Clearance Time (s)		7.2	7.2		7.2	7.2	7.5	7.6		7.9	7.9			
Vehicle Extension (s)		3.0	3.0		3.0	3.0	4.0	3.0		4.0	3.0			
Lane Grp Cap (vph)		161	191		144	193	94	1925	1369	237	2319	1284		
v/s Ratio Prot							0.02	0.46		c0.09	c0.61			
v/s Ratio Perm		c0.08	0.01		0.07	0.01			0.04			0.03		
v/c Ratio		0.70	0.07		0.58	0.09	0.43	0.77	0.04	0.69	0.90	0.03		
Uniform Delay, d ₁		66.0	61.0		65.1	61.1	71.6	22.9	0.0	64.9	20.5	0.0		
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d ₂		12.3	0.2		5.9	0.2	4.2	1.9	0.1	8.7	5.1	0.0		
Delay (s)		78.3	61.2		71.0	61.3	75.8	24.8	0.1	73.6	25.6	0.0		
Level of Service		E	E		E	E	E	C	A	E	C	A		
Approach Delay (s/veh)		69.6			65.0			25.2			28.5			
Approach LOS		E			E			C			C			
Intersection Summary														
HCM 2000 Control Delay (s/veh)			31.4									HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio			0.88											
Actuated Cycle Length (s)			156.5								22.7			
Intersection Capacity Utilization			89.1%										ICU Level of Service	E
Analysis Period (min)			15											

c Critical Lane Group

Lanes, Volumes, Timings
 2: Harry J. Parrish Blvd & Clover Hill Rd

Manassas HEF EA
 09/09/2025



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	116	1	4	49	0	55
Future Volume (vph)	116	1	4	49	0	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected		0.954				
Satd. Flow (prot)	0	1745	1900	1524	1900	1404
Flt Permitted		0.954				
Satd. Flow (perm)	0	1745	1900	1524	1900	1404
Link Speed (mph)		35	35		25	
Link Distance (ft)		4575	551		1256	
Travel Time (s)		89.1	10.7		34.3	
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.81	0.25	0.50	0.68	0.88	0.58
Heavy Vehicles (%)	4%	0%	0%	6%	0%	15%
Adj. Flow (vph)	143	4	8	72	0	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	147	8	72	0	95
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Stop	Stop		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.5%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 2: Harry J. Parrish Blvd & Clover Hill Rd

Manassas HEF EA
 09/09/2025



















Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (veh/h)	116	1	4	49	0	55
Future Volume (Veh/h)	116	1	4	49	0	55
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.25	0.50	0.68	0.88	0.58
Hourly flow rate (vph)	143	4	8	72	0	95
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	4	0	0	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4	0	0	0	0	
tC, single (s)	7.1	6.5	6.5	6.3	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.4	2.2	
p0 queue free %	85	100	99	93	100	
cM capacity (veh/h)	938	900	900	1073	1636	
Direction, Lane #						
	SE 1	NW 1	NW 2	SW 1	SW 2	
Volume Total	147	8	72	0	95	
Volume Left	143	0	0	0	0	
Volume Right	0	0	72	0	95	
cSH	937	900	1073	1700	1700	
Volume to Capacity	0.16	0.00*	0.07	0.00	0.06	
Queue Length 95th (ft)	14	1	5	0	0	
Control Delay (s/veh)	9.6	9.0	8.6	0.0	0.0	
Lane LOS	A	A	A			
Approach Delay (s/veh)	9.6	8.6		0.0		
Approach LOS	A	A				
Intersection Summary						
Average Delay			6.5			
Intersection Capacity Utilization			16.5%		ICU Level of Service	A
Analysis Period (min)			15			

* Value less than 0.01.

















Lanes, Volumes, Timings
 3: Parking Lot/Harry J. Parrish Blvd

Manassas HEF EA
 09/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	4	4	4	3	64	2	8	12	59	7	0
Future Volume (vph)	7	4	4	4	3	64	2	8	12	59	7	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.946			0.878			0.929				
Flt Protected		0.980			0.998			0.995			0.959	
Satd. Flow (prot)	0	1761	0	0	1579	0	0	1686	0	0	1744	0
Flt Permitted		0.980			0.998			0.995			0.959	
Satd. Flow (perm)	0	1761	0	0	1579	0	0	1686	0	0	1744	0
Link Speed (mph)		20			35			35			35	
Link Distance (ft)		296			4575			313			332	
Travel Time (s)		10.1			89.1			6.1			6.5	
Confl. Bikes (#/hr)									4			1
Peak Hour Factor	0.44	0.50	0.25	0.75	0.50	0.63	0.50	0.50	0.55	0.78	0.58	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	6%	0%	0%	8%	3%	14%	0%
Adj. Flow (vph)	16	8	16	5	6	102	4	16	22	76	12	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	113	0	0	42	0	0	88	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	21.3%					ICU Level of Service A						
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 3: Parking Lot/Harry J. Parrish Blvd

Manassas HEF EA
 09/09/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	4	4	3	64	2	8	12	59	7	0
Future Volume (Veh/h)	7	4	4	4	3	64	2	8	12	59	7	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.44	0.50	0.25	0.75	0.50	0.63	0.50	0.50	0.55	0.78	0.58	0.88
Hourly flow rate (vph)	16	8	16	5	6	102	4	16	22	76	12	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	202	210	12	219	199	27	12			38		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	202	210	12	219	199	27	12			38		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	98	99	99	99	99	90	100			95		
cM capacity (veh/h)	655	656	1074	696	665	1037	1620			1566		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	40	113	42	88								
Volume Left	16	5	4	76								
Volume Right	16	102	22	0								
cSH	776	986	1620	1566								
Volume to Capacity	0.05	0.11	0.00*	0.05								
Queue Length 95th (ft)	4	10	0	4								
Control Delay (s/veh)	9.9	9.1	0.7	6.5								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	9.9	9.1	0.7	6.5								
Approach LOS	A	A										
Intersection Summary												
Average Delay			7.2									
Intersection Capacity Utilization			21.3%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	4	4	4	3	64	2	8	12	59	7	0
Future Vol, veh/h	7	4	4	4	3	64	2	8	12	59	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	44	50	25	75	50	63	50	50	55	78	58	88
Heavy Vehicles, %	0	0	0	0	0	6	0	0	8	3	14	0
Mvmt Flow	16	8	16	5	6	102	4	16	22	76	12	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	202	210	12	211	199	27	12	0	0	38	0	0
Stage 1	164	164	-	35	35	-	-	-	-	-	-	-
Stage 2	38	46	-	176	164	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.26	4.1	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.354	2.2	-	-	2.227	-	-
Pot Cap-1 Maneuver	761	691	1074	750	700	1037	1620	-	-	1566	-	-
Stage 1	843	766	-	986	870	-	-	-	-	-	-	-
Stage 2	982	861	-	831	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	654	655	1074	703	664	1037	1620	-	-	1566	-	-
Mov Cap-2 Maneuver	654	655	-	703	664	-	-	-	-	-	-	-
Stage 1	840	728	-	983	867	-	-	-	-	-	-	-
Stage 2	877	858	-	770	728	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	9.9		8.5		0.7		6.4	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1620	-	-	776	1153	1566	-	-
HCM Lane V/C Ratio	0.002	-	-	0.051	0.098	0.048	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	9.9	8.5	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.2	0.3	0.2	-	-

Lanes, Volumes, Timings
4: Wakeman Dr & Frontage Rd Exit

Manassas HEF EA
09/09/2025













Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	0	0	18	15	0
Future Volume (vph)	4	0	0	18	15	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1805	1900	0	1792	1776	0
Flt Permitted	0.950					
Satd. Flow (perm)	1805	1900	0	1792	1776	0
Link Speed (mph)	20			35	35	
Link Distance (ft)	393			735	313	
Travel Time (s)	13.4			14.3	6.1	
Peak Hour Factor	0.38	0.88	0.88	0.64	0.70	0.88
Heavy Vehicles (%)	0%	0%	0%	6%	7%	0%
Adj. Flow (vph)	11	0	0	28	21	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	28	21	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
4: Wakeman Dr & Frontage Rd Exit

Manassas HEF EA
09/09/2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	0	0	18	15	0
Future Volume (Veh/h)	4	0	0	18	15	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.38	0.88	0.88	0.64	0.70	0.88
Hourly flow rate (vph)	11	0	0	28	21	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	49	21	21			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	49	21	21			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	965	1062	1608			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	11	0	28	21		
Volume Left	11	0	0	0		
Volume Right	0	0	0	0		
cSH	965	1700	1700	1700		
Volume to Capacity	0.01	0.00	0.02	0.01		
Queue Length 95th (ft)	1	0	0	0		
Control Delay (s/veh)	8.8	0.0	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	8.8		0.0	0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	1.6					
Intersection Capacity Utilization	13.3%			ICU Level of Service	A	
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	4	0	0	18	15	0
Future Vol, veh/h	4	0	0	18	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	38	88	88	64	70	88
Heavy Vehicles, %	0	0	0	6	7	0
Mvmt Flow	11	0	0	28	21	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	49	21	-	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	965	1062	0	-	-	0
Stage 1	1007	-	0	-	-	0
Stage 2	1000	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	965	1062	-	-	-	-
Mov Cap-2 Maneuver	965	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	965	-	-
HCM Lane V/C Ratio	-	0.011	-	-
HCM Ctrl Dly (s/v)	-	8.8	0	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q (veh)	-	0	-	-

Lanes, Volumes, Timings
5: Frontage Rd Entrance & Wakeman Dr

Manassas HEF EA
09/09/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	5	5	74	61	11
Future Volume (vph)	13	5	5	74	61	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			165
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr _t	0.966					0.850
Fl _t Protected	0.964			0.995		
Satd. Flow (prot)	1769	0	0	1790	1810	1615
Fl _t Permitted	0.964			0.995		
Satd. Flow (perm)	1769	0	0	1790	1810	1615
Link Speed (mph)	20			35	35	
Link Distance (ft)	189			332	652	
Travel Time (s)	6.4			6.5	12.7	
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.54	0.62	0.42	0.70	0.85	0.69
Heavy Vehicles (%)	0%	0%	20%	4%	5%	0%
Adj. Flow (vph)	24	8	12	106	72	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	0	118	72	16
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.0%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
5: Frontage Rd Entrance & Wakeman Dr

Manassas HEF EA
09/09/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	5	5	74	61	11
Future Volume (Veh/h)	13	5	5	74	61	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.54	0.62	0.42	0.70	0.85	0.69
Hourly flow rate (vph)	24	8	12	106	72	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	202	72	88			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	202	72	88			
tC, single (s)	6.4	6.2	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	97	99	99			
cM capacity (veh/h)	784	996	1402			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	32	118	72	16		
Volume Left	24	12	0	0		
Volume Right	8	0	0	16		
cSH	828	1402	1700	1700		
Volume to Capacity	0.04	0.00*	0.04	0.00*		
Queue Length 95th (ft)	3	1	0	0		
Control Delay (s/veh)	9.5	0.8	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	9.5	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	1.7					
Intersection Capacity Utilization	18.0%			ICU Level of Service	A	
Analysis Period (min)	15					

* Value less than 0.01.

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	5	5	74	61	11
Future Vol, veh/h	13	5	5	74	61	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	165
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	54	62	42	70	85	69
Heavy Vehicles, %	0	0	20	4	5	0
Mvmt Flow	24	8	12	106	72	16

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	202	72	88	0	0
Stage 1	72	-	-	-	-
Stage 2	130	-	-	-	-
Critical Hdwy	6.4	6.2	4.3	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.38	-	-
Pot Cap-1 Maneuver	791	996	1402	-	-
Stage 1	956	-	-	-	-
Stage 2	901	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	784	996	1402	-	-
Mov Cap-2 Maneuver	784	-	-	-	-
Stage 1	947	-	-	-	-
Stage 2	901	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.5	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1402	-	828	-	-
HCM Lane V/C Ratio	0.008	-	0.039	-	-
HCM Ctrl Dly (s/v)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	30	61	70	31	26
Future Volume (vph)	20	30	61	70	31	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0	145			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.928	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1570	1509	1770	1845	1581	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1570	1509	1770	1845	1581	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	671			989	700	
Travel Time (s)	13.1			19.3	13.6	
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.47	0.75	0.75	0.80	0.78	0.56
Heavy Vehicles (%)	15%	7%	2%	3%	3%	19%
Adj. Flow (vph)	43	40	81	88	40	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	40	81	88	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.0% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
6: Wakeman Dr & Observation Rd

Manassas HEF EA
09/09/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	30	61	70	31	26
Future Volume (Veh/h)	20	30	61	70	31	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.47	0.75	0.75	0.80	0.78	0.56
Hourly flow rate (vph)	43	40	81	88	40	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	313	63	86			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	313	63	86			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	93	96	95			
cM capacity (veh/h)	619	988	1510			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	43	40	81	88	86	
Volume Left	43	0	81	0	0	
Volume Right	0	40	0	0	46	
cSH	619	988	1510	1700	1700	
Volume to Capacity	0.07	0.04	0.05	0.05	0.05	
Queue Length 95th (ft)	6	3	4	0	0	
Control Delay (s/veh)	11.3	8.8	7.5	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	10.1		3.6		0.0	
Approach LOS	B					
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			20.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	20	30	61	70	31	26
Future Vol, veh/h	20	30	61	70	31	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	105	0	145	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	47	75	75	80	78	56
Heavy Vehicles, %	15	7	2	3	3	19
Mvmt Flow	43	40	81	88	40	46










Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	313	63	86	0	0
Stage 1	63	-	-	-	-
Stage 2	250	-	-	-	-
Critical Hdwy	6.55	6.27	4.12	-	-
Critical Hdwy Stg 1	5.55	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-
Follow-up Hdwy	3.635	3.363	2.218	-	-
Pot Cap-1 Maneuver	654	988	1510	-	-
Stage 1	928	-	-	-	-
Stage 2	762	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	619	988	1510	-	-
Mov Cap-2 Maneuver	619	-	-	-	-
Stage 1	878	-	-	-	-
Stage 2	762	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10	3.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1510	-	619	988	-	-
HCM Lane V/C Ratio	0.054	-	0.069	0.04	-	-
HCM Ctrl Dly (s/v)	7.5	-	11.2	8.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.2	-	0.2	0.1	-	-










Lanes, Volumes, Timings
8: Piper Ln/Observation Rd

Manassas HEF EA
09/09/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	28	8	26	28	28	66
Future Volume (vph)	28	8	26	28	28	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.970		0.946			
Flt Protected	0.962					0.987
Satd. Flow (prot)	1773	0	1677	0	0	1809
Flt Permitted	0.962					0.987
Satd. Flow (perm)	1773	0	1677	0	0	1809
Link Speed (mph)	25		35			35
Link Distance (ft)	612		1029			692
Travel Time (s)	16.7		20.0			13.5
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.88	0.88	0.54	0.88	0.88	0.75
Heavy Vehicles (%)	0%	0%	12%	0%	0%	5%
Adj. Flow (vph)	32	9	48	32	32	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	80	0	0	120
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.7%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 8: Piper Ln/Observation Rd

Manassas HEF EA
 09/09/2025










						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	8	26	28	28	66
Future Volume (Veh/h)	28	8	26	28	28	66
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.54	0.88	0.88	0.75
Hourly flow rate (vph)	32	9	48	32	32	88
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	216	64			80	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216	64			80	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			98	
cM capacity (veh/h)	760	1006			1531	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	41	80	120			
Volume Left	32	0	32			
Volume Right	9	32	0			
cSH	804	1700	1531			
Volume to Capacity	0.05	0.05	0.02			
Queue Length 95th (ft)	4	0	2			
Control Delay (s/veh)	9.7	0.0	2.1			
Lane LOS	A		A			
Approach Delay (s/veh)	9.7	0.0	2.1			
Approach LOS	A					
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			21.7%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	2.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	8	26	28	28	66
Future Vol, veh/h	28	8	26	28	28	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	54	88	88	75
Heavy Vehicles, %	0	0	12	0	0	5
Mvmt Flow	32	9	48	32	32	88

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	216	64	0	0	80
Stage 1	64	-	-	-	-
Stage 2	152	-	-	-	-
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	777	1006	-	-	1531
Stage 1	964	-	-	-	-
Stage 2	881	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	760	1006	-	-	1531
Mov Cap-2 Maneuver	760	-	-	-	-
Stage 1	964	-	-	-	-
Stage 2	862	-	-	-	-










Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.7	0	2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	804	1531
HCM Lane V/C Ratio	-	-	0.051	0.021
HCM Ctrl Dly (s/v)	-	-	9.7	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.2	0.1

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	87	0	0	72
Future Volume (vph)	0	0	87	0	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1900	0	1845	0	0	1827
Flt Permitted						
Satd. Flow (perm)	1900	0	1845	0	0	1827
Link Speed (mph)	20		35			35
Link Distance (ft)	455		652			568
Travel Time (s)	15.5		12.7			11.1
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	3%	0%	0%	4%
Adj. Flow (vph)	0	0	99	0	0	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	99	0	0	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	7.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 12: Wakeman Dr & S Satellite Driveway

Manassas HEF EA
 09/09/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	87	0	0	72
Future Volume (Veh/h)	0	0	87	0	0	72
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	0	99	0	0	82
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	181	99			99	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	181	99			99	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	813	962			1507	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	99	82			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1507			
Volume to Capacity	0.00	0.06	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			7.9%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			A
Traffic Vol, veh/h	0	0	87	0	0	72
Future Vol, veh/h	0	0	87	0	0	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	3	0	0	4
Mvmt Flow	0	0	99	0	0	82

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	181	99	0	0	99
Stage 1	99	-	-	-	-
Stage 2	82	-	-	-	-
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	813	962	-	-	1507
Stage 1	930	-	-	-	-
Stage 2	946	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	813	962	-	-	1507
Mov Cap-2 Maneuver	813	-	-	-	-
Stage 1	930	-	-	-	-
Stage 2	946	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1507
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	-	0

Lanes, Volumes, Timings
 13: Wakeman Dr & N Satellite Driveway

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	87	0	0	72
Future Volume (vph)	0	0	87	0	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1900	0	1845	0	0	1827
Flt Permitted						
Satd. Flow (perm)	1900	0	1845	0	0	1827
Link Speed (mph)	20		35			35
Link Distance (ft)	404		568			681
Travel Time (s)	13.8		11.1			13.3
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	3%	0%	0%	4%
Adj. Flow (vph)	0	0	99	0	0	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	99	0	0	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	7.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 13: Wakeman Dr & N Satellite Driveway

Manassas HEF EA
 09/09/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	87	0	0	72
Future Volume (Veh/h)	0	0	87	0	0	72
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	0	99	0	0	82
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	181	99			99	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	181	99			99	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	813	962			1507	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	99	82			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1507			
Volume to Capacity	0.00	0.06	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	7.9%		ICU Level of Service	A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	0	0	87	0	0	72
Future Vol, veh/h	0	0	87	0	0	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	3	0	0	4
Mvmt Flow	0	0	99	0	0	82

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	181	99	0	0	99
Stage 1	99	-	-	-	-
Stage 2	82	-	-	-	-
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	813	962	-	-	1507
Stage 1	930	-	-	-	-
Stage 2	946	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	813	962	-	-	1507
Mov Cap-2 Maneuver	813	-	-	-	-
Stage 1	930	-	-	-	-
Stage 2	946	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1507
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	-	0



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	61	87	0	11	44
Future Volume (vph)	0	61	87	0	11	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.893	
Flt Protected					0.990	
Satd. Flow (prot)	0	1810	1845	0	1680	0
Flt Permitted					0.990	
Satd. Flow (perm)	0	1810	1845	0	1680	0
Link Speed (mph)		35	35		20	
Link Distance (ft)		989	681		412	
Travel Time (s)		19.3	13.3		14.0	
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	3%	0%	0%	0%
Adj. Flow (vph)	0	69	99	0	13	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	69	99	0	63	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.6%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 14: Wakeman Dr & Employee Lot

Manassas HEF EA
 09/09/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	0	61	87	0	11	44
Future Volume (Veh/h)	0	61	87	0	11	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	69	99	0	13	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	99				168	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	99				168	99
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	95
cM capacity (veh/h)	1507				827	962
Direction, Lane #	SE 1	NW 1	SW 1			
Volume Total	69	99	63			
Volume Left	0	0	13			
Volume Right	0	0	50			
cSH	1507	1700	931			
Volume to Capacity	0.00	0.06	0.07			
Queue Length 95th (ft)	0	0	5			
Control Delay (s/veh)	0.0	0.0	9.1			
Lane LOS			A			
Approach Delay (s/veh)	0.0	0.0	9.1			
Approach LOS			A			
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			14.6%		ICU Level of Service	A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	2.5					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	0	61	87	0	11	44
Future Vol, veh/h	0	61	87	0	11	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	5	3	0	0	0
Mvmt Flow	0	69	99	0	13	50




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	99	0	-	0	168 99
Stage 1	-	-	-	-	99 -
Stage 2	-	-	-	-	69 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1507	-	-	-	827 962
Stage 1	-	-	-	-	930 -
Stage 2	-	-	-	-	959 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1507	-	-	-	827 962
Mov Cap-2 Maneuver	-	-	-	-	827 -
Stage 1	-	-	-	-	930 -
Stage 2	-	-	-	-	959 -

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1507	- 932
HCM Lane V/C Ratio	-	-	-	- 0.067
HCM Ctrl Dly (s/v)	-	-	0	- 9.1
HCM Lane LOS	-	-	A	- A
HCM 95th %tile Q (veh)	-	-	0	- 0.2

Lanes, Volumes, Timings
 15: Gateway Blvd & Carolina Dr

Manassas HEF EA
 09/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	51	1	11	16	32	2	3	9	36	4	33
Future Volume (vph)	59	51	1	11	16	32	2	3	9	36	4	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.912			0.925				0.850
Flt Protected	0.950			0.950				0.994			0.958	
Satd. Flow (prot)	1805	3329	0	1530	3125	0	0	1646	0	0	1729	1524
Flt Permitted	0.950			0.950				0.994			0.958	
Satd. Flow (perm)	1805	3329	0	1530	3125	0	0	1646	0	0	1729	1524
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1357			2771			405			407	
Travel Time (s)		26.4			54.0			11.0			11.1	
Confl. Peds. (#/hr)	1		2	2		1			1	1		
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.87	0.71	0.25	0.55	0.57	0.80	0.50	0.25	0.45	0.60	0.50	0.63
Heavy Vehicles (%)	0%	8%	0%	18%	13%	0%	0%	0%	11%	6%	0%	6%
Adj. Flow (vph)	68	72	4	20	28	40	4	12	20	60	8	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	76	0	20	68	0	0	36	0	0	68	52
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other




















Control Type: Unsignalized

Intersection Capacity Utilization 25.7% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
 15: Gateway Blvd & Carolina Dr

Manassas HEF EA
 09/09/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	51	1	11	16	32	2	3	9	36	4	33
Future Volume (Veh/h)	59	51	1	11	16	32	2	3	9	36	4	33
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.71	0.25	0.55	0.57	0.80	0.50	0.25	0.45	0.60	0.50	0.63
Hourly flow rate (vph)	68	72	4	20	28	40	4	12	20	60	8	52
Pedestrians					1			2			1	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					3.5			3.5			3.5	
Percent Blockage					0			0			0	
Right turn flare (veh)												4
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	69			78			296	321	41	288	303	35
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	69			78			296	321	41	288	303	35
tC, single (s)	4.1			4.5			7.5	6.5	7.1	7.6	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.4			3.5	4.0	3.4	3.6	4.0	3.4
p0 queue free %	96			99			99	98	98	90	99	95
cM capacity (veh/h)	1543			1406			571	563	990	580	576	1016
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	68	48	28	20	19	49	36	120				
Volume Left	68	0	0	20	0	0	4	60				
Volume Right	0	0	4	0	0	40	20	52				
cSH	1543	1700	1700	1406	1700	1700	742	1022				
Volume to Capacity	0.04	0.03	0.02	0.01	0.01	0.03	0.05	0.12				
Queue Length 95th (ft)	3	0	0	1	0	0	4	10				
Control Delay (s/veh)	7.4	0.0	0.0	7.6	0.0	0.0	10.1	10.6				
Lane LOS	A			A			B	B				
Approach Delay (s/veh)	3.5			1.7			10.1	10.6				
Approach LOS							B	B				
Intersection Summary												
Average Delay			5.9									
Intersection Capacity Utilization		25.7%		ICU Level of Service	A							
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕			↕	↗
Traffic Vol, veh/h	59	51	1	11	16	32	2	3	9	36	4	33
Future Vol, veh/h	59	51	1	11	16	32	2	3	9	36	4	33
Conflicting Peds, #/hr	1	0	2	2	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	71	25	55	57	80	50	25	45	60	50	63
Heavy Vehicles, %	0	8	0	18	13	0	0	0	11	6	0	6
Mvmt Flow	68	72	4	20	28	40	4	12	20	60	8	52























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	78	0	0	270	321	41	268	303	35
Stage 1	-	-	-	-	-	-	212	212	-	89	89	-
Stage 2	-	-	-	-	-	-	58	109	-	179	214	-
Critical Hdwy	4.1	-	-	4.46	-	-	7.5	6.5	7.12	7.62	6.5	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.62	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.62	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.41	3.56	4	3.36
Pot Cap-1 Maneuver	1545	-	-	1409	-	-	666	599	993	653	613	1017
Stage 1	-	-	-	-	-	-	776	731	-	897	825	-
Stage 2	-	-	-	-	-	-	953	809	-	794	729	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1544	-	-	1406	-	-	596	563	990	601	576	1016
Mov Cap-2 Maneuver	-	-	-	-	-	-	596	563	-	601	576	-
Stage 1	-	-	-	-	-	-	740	697	-	857	813	-
Stage 2	-	-	-	-	-	-	882	797	-	730	695	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	3.5			1.7			10.1			10.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	746	1544	-	-	1406	-	-	598	1016
HCM Lane V/C Ratio	0.048	0.044	-	-	0.014	-	-	0.114	0.052
HCM Ctrl Dly (s/v)	10.1	7.4	-	-	7.6	-	-	11.8	8.7
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0.2	0.1	-	-	0	-	-	0.4	0.2

Lanes, Volumes, Timings
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	6	22	35	7	153	17	1448	42	124	1314	21
Future Volume (vph)	11	6	22	35	7	153	17	1448	42	124	1314	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			-4%			-2%			0%	
Storage Length (ft)	0		0	0		0	470		280	470		355
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.99			
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.974			0.960		0.950			0.950		
Satd. Flow (prot)	0	1888	1647	0	1860	1631	1823	3540	1524	1805	3471	1615
Flt Permitted		0.796			0.738		0.950			0.950		
Satd. Flow (perm)	0	1543	1647	0	1430	1631	1823	3540	1505	1805	3471	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			184			113			113
Link Speed (mph)		25			25			55				55
Link Distance (ft)		1256			1187			3553				2951
Travel Time (s)		34.3			32.4			44.0				36.6
Confl. Bikes (#/hr)									3			
Peak Hour Factor	0.62	0.38	0.59	0.58	0.58	0.83	0.61	0.98	0.81	0.91	0.99	0.75
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	3%	7%	0%	4%	0%
Adj. Flow (vph)	18	16	37	60	12	184	28	1478	52	136	1327	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	37	0	72	184	28	1478	52	136	1327	28
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			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.99	0.99	0.99	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	4	1	1	4	1
Detector Template		Thru	Right		Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)		35	35		35	35	35	406	46	35	406	46
Trailing Detector (ft)		-5	-5		-5	-5	-5	94	40	-5	94	40
Detector 1 Position(ft)		-5	-5		-5	-5	-5	94	40	-5	94	40
Detector 1 Size(ft)		40	40		40	40	40	6	6	40	6	6
Detector 1 Type		Cl+Ex	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	0.0
Detector 1 Queue (s)		0.0	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	0.0
Detector 2 Position(ft)								196				196
Detector 2 Size(ft)								6				6
Detector 2 Type								Cl+Ex				Cl+Ex
Detector 2 Channel												

Lanes, Volumes, Timings
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)								0.0			0.0	
Detector 3 Position(ft)								298			298	
Detector 3 Size(ft)								6			6	
Detector 3 Type								Cl+Ex			Cl+Ex	
Detector 3 Channel												
Detector 3 Extend (s)								0.0			0.0	
Detector 4 Position(ft)								400			400	
Detector 4 Size(ft)								6			6	
Detector 4 Type								Cl+Ex			Cl+Ex	
Detector 4 Channel												
Detector 4 Extend (s)								0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases		8			4		1	6		5		2
Permitted Phases	8		8	4		4			Free			Free
Detector Phase	8	8	8	4	4	4	1	6		5		2
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	7.0	20.0		7.0	20.0	
Minimum Split (s)	43.2	43.2	43.2	43.2	43.2	43.2	14.5	34.6		14.9	34.9	
Total Split (s)	43.2	43.2	43.2	43.2	43.2	43.2	37.5	107.6		37.9	108.0	
Total Split (%)	22.9%	22.9%	22.9%	22.9%	22.9%	22.9%	19.9%	57.0%		20.1%	57.2%	
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0	36.0	30.0	100.0		30.0	100.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.7	5.6		4.9	5.9	
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.8	2.0		3.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.2	7.2		7.2	7.2	7.5	7.6		7.9	7.9	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0		4.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0		7.0			7.0	
Flash Don't Walk (s)	28.0	28.0	28.0	28.0	28.0	28.0		20.0			20.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)		13.6	13.6		13.6	13.6	9.1	72.0	126.7	17.3	88.0	126.7
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.07	0.57	1.00	0.14	0.69	1.00
v/c Ratio		0.21	0.15		0.47	0.54	0.22	0.73	0.03	0.55	0.55	0.02
Control Delay (s/veh)		62.5	1.7		70.5	14.8	68.8	22.8	0.0	64.4	11.8	0.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		62.5	1.7		70.5	14.8	68.8	22.8	0.0	64.4	11.8	0.0
LOS		E	A		E	B	E	C	A	E	B	A
Approach Delay (s/veh)		30.8			30.5			22.9				16.4
Approach LOS		C			C			C				B
90th %ile Green (s)	19.5	19.5	19.5	19.5	19.5	19.5	11.8	100.0		24.7	113.0	
90th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Gap	Max		Gap	Hold	
70th %ile Green (s)	15.6	15.6	15.6	15.6	15.6	15.6	10.0	85.0		20.6	95.7	
70th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Gap	Gap		Gap	Hold	
50th %ile Green (s)	13.0	13.0	13.0	13.0	13.0	13.0	8.8	71.4		17.4	80.1	
50th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Gap	Gap		Gap	Hold	
30th %ile Green (s)	10.4	10.4	10.4	10.4	10.4	10.4	0.0	60.0		14.3	81.9	
30th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Skip	Gap		Gap	Hold	

Lanes, Volumes, Timings
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10th %ile Green (s)	10.0	10.0	10.0	10.0	10.0	10.0	0.0	47.2		10.9	65.7	
10th %ile Term Code	Hold	Hold	Hold	Min	Min	Min	Skip	Gap		Gap	Hold	
Queue Length 50th (ft)		26	0		56	0	22	437	0	103	301	0
Queue Length 95th (ft)		30	0		82	56	43	646	0	217	433	0
Internal Link Dist (ft)		1176			1107			3473			2871	
Turn Bay Length (ft)							470		280	470		355
Base Capacity (vph)		458	540		425	614	451	2852	1505	447	2852	1615
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.07	0.07		0.17	0.30	0.06	0.52	0.03	0.30	0.47	0.02























Intersection Summary	
Area Type:	Other
Cycle Length:	188.7
Actuated Cycle Length:	126.7
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay (s/veh):	20.8
Intersection LOS:	C
Intersection Capacity Utilization:	76.2%
ICU Level of Service:	D
Analysis Period (min):	15
90th %ile Actuated Cycle:	166.9
70th %ile Actuated Cycle:	143.9
50th %ile Actuated Cycle:	124.5
30th %ile Actuated Cycle:	107.4
10th %ile Actuated Cycle:	90.8

Splits and Phases: 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Ø1	Ø2	Ø4
37.5 s	108 s	43.2 s
Ø5	Ø6	Ø8
37.9 s	107.6 s	43.2 s

HCM Signalized Intersection Capacity Analysis
 1: PW Pkwy (234 By-Pass) & Clover Hill Rd

Manassas HEF EA
 09/09/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	6	22	35	7	153	17	1448	42	124	1314	21
Future Volume (vph)	11	6	22	35	7	153	17	1448	42	124	1314	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			-4%			-2%				0%
Total Lost time (s)		7.2	7.2		7.2	7.2	7.5	7.6	4.0	7.9	7.9	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1888	1647		1860	1631	1823	3540	1505	1805	3471	1615
Flt Permitted		0.80	1.00		0.74	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1542	1647		1430	1631	1823	3540	1505	1805	3471	1615
Peak-hour factor, PHF	0.62	0.38	0.59	0.58	0.58	0.83	0.61	0.98	0.81	0.91	0.99	0.75
Adj. Flow (vph)	18	16	37	60	12	184	28	1478	52	136	1327	28
RTOR Reduction (vph)	0	0	33	0	0	165	0	0	0	0	0	0
Lane Group Flow (vph)	0	34	4	0	72	19	28	1478	52	136	1327	28
Confl. Bikes (#/hr)									3			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	3%	7%	0%	4%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases		8		4	4		1	6		5	2	
Permitted Phases	8		8	4	4				Free			Free
Actuated Green, G (s)		13.6	13.6		13.6	13.6	5.3	75.9	129.5	17.3	88.0	129.5
Effective Green, g (s)		13.6	13.6		13.6	13.6	5.3	75.9	129.5	17.3	88.0	129.5
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.04	0.59	1.00	0.13	0.68	1.00
Clearance Time (s)		7.2	7.2		7.2	7.2	7.5	7.6		7.9	7.9	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	4.0	3.0		4.0	3.0	
Lane Grp Cap (vph)		161	172		150	171	74	2074	1505	241	2358	1615
v/s Ratio Prot							0.02	c0.42		c0.08	c0.38	
v/s Ratio Perm		0.02	0.00		c0.05	0.01			0.03			0.02
v/c Ratio		0.21	0.02		0.48	0.11	0.38	0.71	0.03	0.56	0.56	0.02
Uniform Delay, d1		53.0	52.0		54.6	52.5	60.5	19.0	0.0	52.6	10.8	0.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7	0.1		2.4	0.3	4.4	1.2	0.0	3.6	0.3	0.0
Delay (s)		53.7	52.0		57.0	52.8	64.9	20.2	0.0	56.2	11.1	0.0
Level of Service		D	D		E	D	E	C	A	E	B	A
Approach Delay (s/veh)		52.8		54.0			20.4			15.0		
Approach LOS		D		D			C			B		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			21.2									C
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			129.5								22.7	
Intersection Capacity Utilization			76.2%									D
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (vph)	38	1	1	1	2	43
Future Volume (vph)	38	1	1	1	2	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t				0.850		0.850
Fl _t Protected		0.956			0.950	
Satd. Flow (prot)	0	1816	1900	1615	1805	1615
Fl _t Permitted		0.956			0.950	
Satd. Flow (perm)	0	1816	1900	1615	1805	1615
Link Speed (mph)		35	35		25	
Link Distance (ft)		4575	551		1256	
Travel Time (s)		89.1	10.7		34.3	
Peak Hour Factor	0.73	0.25	0.25	0.25	0.50	0.63
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	52	4	4	4	4	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	56	4	4	4	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Stop	Stop		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.8%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 2: Harry J. Parrish Blvd & Clover Hill Rd

Manassas HEF EA
 09/09/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↖	↗	↖	↗	↖
Traffic Volume (veh/h)	38	1	1	1	2	43
Future Volume (Veh/h)	38	1	1	1	2	43
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.73	0.25	0.25	0.25	0.50	0.63
Hourly flow rate (vph)	52	4	4	4	4	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	10	8	8	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	10	8	8	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	95	100	100	100	100	
cM capacity (veh/h)	1004	889	889	1091	1636	
Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2	
Volume Total	56	4	4	4	68	
Volume Left	52	0	0	4	0	
Volume Right	0	0	4	0	68	
cSH	995	889	1091	1636	1700	
Volume to Capacity	0.06	0.00*	0.00*	0.00*	0.04	
Queue Length 95th (ft)	4	0	0	0	0	
Control Delay (s/veh)	8.8	9.1	8.3	7.2	0.0	
Lane LOS	A	A	A	A		
Approach Delay (s/veh)	8.8	8.7		0.4		
Approach LOS	A	A				
Intersection Summary						
Average Delay			4.4			
Intersection Capacity Utilization			18.8%		ICU Level of Service	A
Analysis Period (min)			15			

* Value less than 0.01.

Lanes, Volumes, Timings
 3: Parking Lot/Harry J. Parrish Blvd

Manassas HEF EA
 09/09/2025



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	4	2	1	10	3	28	1	5	8	21	4	1
Future Volume (vph)	4	2	1	10	3	28	1	5	8	21	4	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.973			0.928			0.937			0.990	
Flt Protected		0.980			0.987			0.993			0.963	
Satd. Flow (prot)	0	1812	0	0	1740	0	0	1768	0	0	1811	0
Flt Permitted		0.980			0.987			0.993			0.963	
Satd. Flow (perm)	0	1812	0	0	1740	0	0	1768	0	0	1811	0
Link Speed (mph)		20			35			35			35	
Link Distance (ft)		296			4575			313			332	
Travel Time (s)		10.1			89.1			6.1			6.5	
Confl. Bikes (#/hr)										2		
Peak Hour Factor	0.50	0.25	0.25	0.62	0.25	0.88	0.25	0.42	0.58	0.53	0.50	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	8	8	4	16	12	32	4	12	14	40	8	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	60	0	0	30	0	0	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 3: Parking Lot/Harry J. Parrish Blvd

Manassas HEF EA
 09/09/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	2	1	10	3	28	1	5	8	21	4	1
Future Volume (Veh/h)	4	2	1	10	3	28	1	5	8	21	4	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.25	0.25	0.62	0.25	0.88	0.25	0.42	0.58	0.53	0.50	0.25
Hourly flow rate (vph)	8	8	4	16	12	32	4	12	14	40	8	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	123	124	10	125	119	19	12			26		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	123	124	10	125	119	19	12			26		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	100	98	98	97	100			98		
cM capacity (veh/h)	803	749	1077	826	754	1065	1620			1601		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	20	60	30	52								
Volume Left	8	16	4	40								
Volume Right	4	32	14	4								
cSH	821	918	1620	1601								
Volume to Capacity	0.02	0.07	0.00*	0.02								
Queue Length 95th (ft)	2	5	0	2								
Control Delay (s/veh)	9.5	9.2	1.0	5.7								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	9.5	9.2	1.0	5.7								
Approach LOS	A	A										
Intersection Summary												
Average Delay			6.6									
Intersection Capacity Utilization			18.1%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	2	1	10	3	28	1	5	8	21	4	1
Future Vol, veh/h	4	2	1	10	3	28	1	5	8	21	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	25	25	62	25	88	25	42	58	53	50	25
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	8	8	4	16	12	32	4	12	14	40	8	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	123	124	10	123	119	19	12	0	0	26	0	0
Stage 1	90	90	-	27	27	-	-	-	-	-	-	-
Stage 2	33	34	-	96	92	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	856	770	1077	856	775	1065	1620	-	-	1601	-	-
Stage 1	922	824	-	996	877	-	-	-	-	-	-	-
Stage 2	988	871	-	916	823	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	803	748	1077	828	753	1065	1620	-	-	1601	-	-
Mov Cap-2 Maneuver	803	748	-	828	753	-	-	-	-	-	-	-
Stage 1	919	803	-	993	874	-	-	-	-	-	-	-
Stage 2	942	868	-	881	802	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	9.5		7.2		1		5.6	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1620	-	-	821	1693	1601	-	-
HCM Lane V/C Ratio	0.002	-	-	0.024	0.035	0.025	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	9.5	7.2	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.1	0.1	0.1	-	-

Lanes, Volumes, Timings
4: Wakeman Dr & Frontage Rd Exit

Manassas HEF EA
09/09/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	1	0	9	15	0
Future Volume (vph)	5	1	0	9	15	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.850					
Fl _t Protected	0.950					
Satd. Flow (prot)	1805	1615	0	1900	1900	0
Fl _t Permitted	0.950					
Satd. Flow (perm)	1805	1615	0	1900	1900	0
Link Speed (mph)	20			35	35	
Link Distance (ft)	393			735	313	
Travel Time (s)	13.4			14.3	6.1	
Peak Hour Factor	0.50	0.25	0.88	0.56	0.54	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	10	4	0	16	28	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	4	0	16	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 4: Wakeman Dr & Frontage Rd Exit

Manassas HEF EA
 09/09/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1	0	9	15	0
Future Volume (Veh/h)	5	1	0	9	15	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.25	0.88	0.56	0.54	0.88
Hourly flow rate (vph)	10	4	0	16	28	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	44	28	28			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	44	28	28			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	972	1053	1599			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	10	4	16	28		
Volume Left	10	0	0	0		
Volume Right	0	4	0	0		
cSH	972	1053	1700	1700		
Volume to Capacity	0.01	0.00*	0.00*	0.02		
Queue Length 95th (ft)	1	0	0	0		
Control Delay (s/veh)	8.7	8.4	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	8.7		0.0	0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

* Value less than 0.01.

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑	↑	
Traffic Vol, veh/h	5	1	0	9	15	0
Future Vol, veh/h	5	1	0	9	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	25	88	56	54	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	4	0	16	28	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	44	28	-	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	16	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	972	1053	0	-	-	0
Stage 1	1000	-	0	-	-	0
Stage 2	1012	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	972	1053	-	-	-	-
Mov Cap-2 Maneuver	972	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	8.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	972	1053	-
HCM Lane V/C Ratio	-	0.01	0.004	-
HCM Ctrl Dly (s/v)	-	8.7	8.4	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q (veh)	-	0	0	-

Lanes, Volumes, Timings
5: Frontage Rd Entrance & Wakeman Dr

Manassas HEF EA
09/09/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	1	7	30	25	12
Future Volume (vph)	7	1	7	30	25	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			165
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr _t	0.966					0.850
Fl _t Protected	0.964			0.989		
Satd. Flow (prot)	1769	0	0	1879	1900	1615
Fl _t Permitted	0.964			0.989		
Satd. Flow (perm)	1769	0	0	1879	1900	1615
Link Speed (mph)	20			35	35	
Link Distance (ft)	189			332	652	
Travel Time (s)	6.4			6.5	12.7	
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.58	0.25	0.58	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	12	4	12	40	33	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	52	33	16
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 5: Frontage Rd Entrance & Wakeman Dr

Manassas HEF EA
 09/09/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	1	7	30	25	12
Future Volume (Veh/h)	7	1	7	30	25	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.58	0.25	0.58	0.75	0.75	0.75
Hourly flow rate (vph)	12	4	12	40	33	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97	33	49			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97	33	49			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	99			
cM capacity (veh/h)	900	1046	1571			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	16	52	33	16		
Volume Left	12	12	0	0		
Volume Right	4	0	0	16		
cSH	933	1571	1700	1700		
Volume to Capacity	0.02	0.00*	0.02	0.00*		
Queue Length 95th (ft)	1	1	0	0		
Control Delay (s/veh)	8.9	1.7	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	8.9	1.7	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	2.0					
Intersection Capacity Utilization	17.6%			ICU Level of Service	A	
Analysis Period (min)	15					

* Value less than 0.01.

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	1	7	30	25	12
Future Vol, veh/h	7	1	7	30	25	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	165
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	58	25	58	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	4	12	40	33	16

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	97	33	49	0	0
Stage 1	33	-	-	-	-
Stage 2	64	-	-	-	-
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	907	1046	1571	-	-
Stage 1	995	-	-	-	-
Stage 2	964	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	900	1046	1571	-	-
Mov Cap-2 Maneuver	900	-	-	-	-
Stage 1	987	-	-	-	-
Stage 2	964	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	8.9	1.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1571	-	932	-	-
HCM Lane V/C Ratio	0.008	-	0.017	-	-
HCM Ctrl Dly (s/v)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Lanes, Volumes, Timings
6: Wakeman Dr & Observation Rd



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	15	22	18	21	7
Future Volume (vph)	8	15	22	18	21	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0	145			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.970	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1597	1615	1805	1900	1843	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1597	1615	1805	1900	1843	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	671			989	700	
Travel Time (s)	13.1			19.3	13.6	
Peak Hour Factor	0.40	0.54	0.61	0.64	0.75	0.88
Heavy Vehicles (%)	13%	0%	0%	0%	0%	0%
Adj. Flow (vph)	20	28	36	28	28	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	28	36	28	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	17.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
6: Wakeman Dr & Observation Rd

Manassas HEF EA
09/09/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	15	22	18	21	7
Future Volume (Veh/h)	8	15	22	18	21	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.40	0.54	0.61	0.64	0.75	0.88
Hourly flow rate (vph)	20	28	36	28	28	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	132	32	36			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	132	32	36			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	98	97	98			
cM capacity (veh/h)	818	1048	1588			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	20	28	36	28	36	
Volume Left	20	0	36	0	0	
Volume Right	0	28	0	0	8	
cSH	818	1048	1588	1700	1700	
Volume to Capacity	0.02	0.03	0.02	0.02	0.02	
Queue Length 95th (ft)	2	2	2	0	0	
Control Delay (s/veh)	9.5	8.5	7.3	0.0	0.0	
Lane LOS	A	A	A			
Approach Delay (s/veh)	8.9		4.1		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			17.9%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↷	↷	
Traffic Vol, veh/h	8	15	22	18	21	7
Future Vol, veh/h	8	15	22	18	21	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	105	0	145	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	40	54	61	64	75	88
Heavy Vehicles, %	13	0	0	0	0	0
Mvmt Flow	20	28	36	28	28	8

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	132	32	36	0	0
Stage 1	32	-	-	-	-
Stage 2	100	-	-	-	-
Critical Hdwy	6.53	6.2	4.1	-	-
Critical Hdwy Stg 1	5.53	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-
Follow-up Hdwy	3.617	3.3	2.2	-	-
Pot Cap-1 Maneuver	836	1048	1588	-	-
Stage 1	963	-	-	-	-
Stage 2	897	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	817	1048	1588	-	-
Mov Cap-2 Maneuver	817	-	-	-	-
Stage 1	941	-	-	-	-
Stage 2	897	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	8.9	4.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1588	-	817	1048	-	-
HCM Lane V/C Ratio	0.023	-	0.024	0.027	-	-
HCM Ctrl Dly (s/v)	7.3	-	9.5	8.5	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q (veh)	0.1	-	0.1	0.1	-	-

Lanes, Volumes, Timings
8: Piper Ln/Observation Rd










Manassas HEF EA
09/09/2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	4	18	4	2	26
Future Volume (vph)	4	4	18	4	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932		0.977			
Flt Protected	0.976					0.997
Satd. Flow (prot)	1671	0	1768	0	0	1894
Flt Permitted	0.976					0.997
Satd. Flow (perm)	1671	0	1768	0	0	1894
Link Speed (mph)	25		35			35
Link Distance (ft)	612		1029			683
Travel Time (s)	16.7		20.0			13.3
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.88	0.88	0.75	0.88	0.88	0.81
Heavy Vehicles (%)	0%	0%	6%	0%	0%	0%
Adj. Flow (vph)	5	5	24	5	2	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	29	0	0	34
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%		ICU Level of Service A			
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 8: Piper Ln/Observation Rd

Manassas HEF EA
 09/09/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	4	18	4	2	26
Future Volume (Veh/h)	4	4	18	4	2	26
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.75	0.88	0.88	0.81
Hourly flow rate (vph)	5	5	24	5	2	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	63	27			29	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	63	27			29	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	947	1055			1597	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	10	29	34			
Volume Left	5	0	2			
Volume Right	5	5	0			
cSH	998	1700	1597			
Volume to Capacity	0.01	0.02	0.00*			
Queue Length 95th (ft)	1	0	0			
Control Delay (s/veh)	8.6	0.0	0.4			
Lane LOS	A		A			
Approach Delay (s/veh)	8.6	0.0	0.4			
Approach LOS	A					
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

* Value less than 0.01.










Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			Y
Traffic Vol, veh/h	4	4	18	4	2	26
Future Vol, veh/h	4	4	18	4	2	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	75	88	88	81
Heavy Vehicles, %	0	0	6	0	0	0
Mvmt Flow	5	5	24	5	2	32

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	63	27	0	0	29
Stage 1	27	-	-	-	-
Stage 2	36	-	-	-	-
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	948	1054	-	-	1597
Stage 1	1001	-	-	-	-
Stage 2	992	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	947	1054	-	-	1597
Mov Cap-2 Maneuver	947	-	-	-	-
Stage 1	1001	-	-	-	-
Stage 2	991	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.6	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	998	1597
HCM Lane V/C Ratio	-	-	0.009	0.001
HCM Ctrl Dly (s/v)	-	-	8.6	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0	0

Lanes, Volumes, Timings
 12: Wakeman Dr & S Satellite Driveway










						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	37	0	0	37
Future Volume (vph)	0	0	37	0	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr						
Flt Protected						
Satd. Flow (prot)	1900	0	1900	0	0	1900
Flt Permitted						
Satd. Flow (perm)	1900	0	1900	0	0	1900
Link Speed (mph)	20		35			35
Link Distance (ft)	455		652			568
Travel Time (s)	15.5		12.7			11.1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	42	0	0	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	42	0	0	42
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 12: Wakeman Dr & S Satellite Driveway

Manassas HEF EA
 09/09/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	37	0	0	37
Future Volume (Veh/h)	0	0	37	0	0	37
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	0	42	0	0	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	84	42			42	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	84	42			42	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	923	1034			1580	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	42	42			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1580			
Volume to Capacity	0.00	0.02	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	0	0	37	0	0	37
Future Vol, veh/h	0	0	37	0	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	42	0	0	42

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	84	42	0	0	42	0
Stage 1	42	-	-	-	-	-
Stage 2	42	-	-	-	-	-
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	923	1034	-	-	1580	-
Stage 1	986	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	923	1034	-	-	1580	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	986	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1580	-
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	-
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0	-

Lanes, Volumes, Timings
 13: Wakeman Dr & N Satellite Driveway

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	37	0	0	37
Future Volume (vph)	0	0	37	0	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr						
Flt Protected						
Satd. Flow (prot)	1900	0	1900	0	0	1900
Flt Permitted						
Satd. Flow (perm)	1900	0	1900	0	0	1900
Link Speed (mph)	20		35			35
Link Distance (ft)	404		568			681
Travel Time (s)	13.8		11.1			13.3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	42	0	0	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	42	0	0	42
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 13: Wakeman Dr & N Satellite Driveway

Manassas HEF EA
 09/09/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	37	0	0	37
Future Volume (Veh/h)	0	0	37	0	0	37
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	0	42	0	0	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	84	42			42	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	84	42			42	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	923	1034			1580	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	42	42			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1580			
Volume to Capacity	0.00	0.02	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	6.7%			ICU Level of Service	A	
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			4
Traffic Vol, veh/h	0	0	37	0	0	37
Future Vol, veh/h	0	0	37	0	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	42	0	0	42

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	84	42	0	0	42	0
Stage 1	42	-	-	-	-	-
Stage 2	42	-	-	-	-	-
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	923	1034	-	-	1580	-
Stage 1	986	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	923	1034	-	-	1580	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	986	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1580
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	-	0



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	36	37	0	1	3
Future Volume (vph)	0	36	37	0	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t					0.899	
Fl _t Protected					0.988	
Satd. Flow (prot)	0	1900	1900	0	1688	0
Fl _t Permitted					0.988	
Satd. Flow (perm)	0	1900	1900	0	1688	0
Link Speed (mph)		35	35		20	
Link Distance (ft)		989	681		412	
Travel Time (s)		19.3	13.3		14.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	41	42	0	1	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	41	42	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 14: Wakeman Dr & Employee Lot

Manassas HEF EA
 09/09/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	0	36	37	0	1	3
Future Volume (Veh/h)	0	36	37	0	1	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	41	42	0	1	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	42				83	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	42				83	42
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1580				924	1034
Direction, Lane #						
	SE 1	NW 1	SW 1			
Volume Total	41	42	4			
Volume Left	0	0	1			
Volume Right	0	0	3			
cSH	1580	1700	1004			
Volume to Capacity	0.00	0.02	0.00*			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	8.6			
Lane LOS			A			
Approach Delay (s/veh)	0.0	0.0	8.6			
Approach LOS			A			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			13.3%		ICU Level of Service	A
Analysis Period (min)			15			

* Value less than 0.01.

Intersection						
Int Delay, s/veh	0.4					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	0	36	37	0	1	3
Future Vol, veh/h	0	36	37	0	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	41	42	0	1	3

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	42	0	-	0	83 42
Stage 1	-	-	-	-	42 -
Stage 2	-	-	-	-	41 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1580	-	-	-	924 1034
Stage 1	-	-	-	-	986 -
Stage 2	-	-	-	-	987 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1580	-	-	-	924 1034
Mov Cap-2 Maneuver	-	-	-	-	924 -
Stage 1	-	-	-	-	986 -
Stage 2	-	-	-	-	987 -

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1580	- 1004
HCM Lane V/C Ratio	-	-	-	- 0.005
HCM Ctrl Dly (s/v)	-	-	0	- 8.6
HCM Lane LOS	-	-	A	- A
HCM 95th %tile Q (veh)	-	-	0	- 0

Lanes, Volumes, Timings
15: Gateway Blvd & Carolina Dr

Manassas HEF EA
09/09/2025




















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	15	0	4	13	20	0	2	0	31	0	17
Future Volume (vph)	17	15	0	4	13	20	0	2	0	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr _t					0.910							0.850
Fl _t Protected	0.950			0.950								0.950
Satd. Flow (prot)	1805	3610	0	1805	3183	0	0	1900	0	0	1805	1615
Fl _t Permitted	0.950			0.950								0.950
Satd. Flow (perm)	1805	3610	0	1805	3183	0	0	1900	0	0	1805	1615
Link Speed (mph)		35			35			25				25
Link Distance (ft)		1357			2771			405				407
Travel Time (s)		26.4			54.0			11.0				11.1
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.61	0.34	0.88	0.50	0.81	0.83	0.88	0.50	0.88	0.86	0.88	0.61
Heavy Vehicles (%)	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	28	44	0	8	16	24	0	4	0	36	0	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	44	0	8	40	0	0	4	0	0	36	28
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)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 15: Gateway Blvd & Carolina Dr

Manassas HEF EA
 09/09/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	15	0	4	13	20	0	2	0	31	0	17
Future Volume (Veh/h)	17	15	0	4	13	20	0	2	0	31	0	17
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.61	0.34	0.88	0.50	0.81	0.83	0.88	0.50	0.88	0.86	0.88	0.61
Hourly flow rate (vph)	28	44	0	8	16	24	0	4	0	36	0	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	4											
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	40			44			138	156	22	124	144	20
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	40			44			138	156	22	124	144	20
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	99	100	96	100	97
cM capacity (veh/h)	1583			1577			789	723	1056	825	734	1060
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	28	29	15	8	11	29	4	64				
Volume Left	28	0	0	8	0	0	0	36				
Volume Right	0	0	0	0	0	24	0	28				
cSH	1583	1700	1700	1577	1700	1700	723	1467				
Volume to Capacity	0.02	0.02	0.00*	0.00*	0.00*	0.02	0.00*	0.04				
Queue Length 95th (ft)	1	0	0	0	0	0	0	3				
Control Delay (s/veh)	7.3	0.0	0.0	7.3	0.0	0.0	10.0	9.1				
Lane LOS	A			A			B	A				
Approach Delay (s/veh)	2.8			1.2			10.0	9.1				
Approach LOS							B	A				
Intersection Summary												
Average Delay	4.7											
Intersection Capacity Utilization	22.7%			ICU Level of Service				A				
Analysis Period (min)	15											

* Value less than 0.01.

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗			↕↗			↕	↗
Traffic Vol, veh/h	17	15	0	4	13	20	0	2	0	31	0	17
Future Vol, veh/h	17	15	0	4	13	20	0	2	0	31	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	61	34	88	50	81	83	88	50	88	86	88	61
Heavy Vehicles, %	0	0	0	0	8	0	0	0	0	0	0	0
Mvmt Flow	28	44	0	8	16	24	0	4	0	36	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	44	0	0	124	156	22	124	144	20
Stage 1	-	-	-	-	-	-	100	100	-	44	44	-
Stage 2	-	-	-	-	-	-	24	56	-	80	100	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1583	-	-	1577	-	-	843	740	1056	843	751	1060
Stage 1	-	-	-	-	-	-	901	816	-	970	862	-
Stage 2	-	-	-	-	-	-	996	852	-	925	816	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1583	-	-	1577	-	-	807	723	1056	825	734	1060
Mov Cap-2 Maneuver	-	-	-	-	-	-	807	723	-	825	734	-
Stage 1	-	-	-	-	-	-	885	801	-	953	858	-
Stage 2	-	-	-	-	-	-	965	848	-	904	801	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	2.8			1.2			10			9.1		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	723	1583	-	-	1577	-	-	825	1060
HCM Lane V/C Ratio	0.006	0.018	-	-	0.005	-	-	0.044	0.026
HCM Ctrl Dly (s/v)	10	7.3	-	-	7.3	-	-	9.6	8.5
HCM Lane LOS	B	A	-	-	A	-	-	A	A
HCM 95th %tile Q (veh)	0	0.1	-	-	0	-	-	0.1	0.1