



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (vph)	184	4	0	27	63	367
Future Volume (vph)	184	4	0	27	63	367
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		0.953			0.950	
Satd. Flow (prot)	0	1443	1900	1615	1805	1553
Fl _t Permitted		0.953			0.950	
Satd. Flow (perm)	0	1443	1900	1615	1805	1553
Link Speed (mph)		35	35		25	
Link Distance (ft)		4575	551		921	
Travel Time (s)		89.1	10.7		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	26%	0%	0%	0%	0%	4%
Adj. Flow (vph)	200	4	0	29	68	399
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	204	0	29	68	399
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	26.1%
	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
 09/16/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↶	↷	↷	↶	↷
Traffic Volume (veh/h)	184	4	0	27	63	367
Future Volume (Veh/h)	184	4	0	27	63	367
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	200	4	0	29	68	399
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	921					
pX, platoon unblocked						
vC, conflicting volume	136	136	136	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	136	136	136	0	0	
tC, single (s)	7.4	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.7	4.0	4.0	3.3	2.2	
p0 queue free %	73	99	100	97	96	
cM capacity (veh/h)	738	727	727	1091	1636	
Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2	
Volume Total	204	0	29	68	399	
Volume Left	200	0	0	68	0	
Volume Right	0	0	29	0	399	
cSH	738	1700	1091	1636	1700	
Volume to Capacity	0.28	0.00	0.03	0.04	0.23	
Queue Length 95th (ft)	28	0	2	3	0	
Control Delay (s/veh)	11.7	0.0	8.4	7.3	0.0	
Lane LOS	B	A	A	A		
Approach Delay (s/veh)	11.7	8.4		1.1		
Approach LOS	B	A				
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			26.1%	ICU Level of Service	A	
Analysis Period (min)			15			

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

















Manassas HEF EA
 09/16/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	1	14	13	105	4	9	1	51	6	1
Future Volume (vph)	1	0	1	14	13	105	4	9	1	51	6	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
Frt		0.932			0.892			0.991			0.998	
Flt Protected		0.976			0.995			0.987			0.958	
Satd. Flow (prot)	0	1728	0	0	1634	0	0	1858	0	0	1783	0
Flt Permitted		0.976			0.995			0.987			0.958	
Satd. Flow (perm)	0	1728	0	0	1634	0	0	1858	0	0	1783	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	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	17%	0%
Adj. Flow (vph)	1	0	1	15	14	114	4	10	1	55	7	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	143	0	0	15	0	0	63	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	22.9%
	ICU Level of Service A
Analysis Period (min)	15

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

Manassas HEF EA
 09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	14	13	105	4	9	1	51	6	1
Future Volume (Veh/h)	1	0	1	14	13	105	4	9	1	51	6	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	1	15	14	114	4	10	1	55	7	1
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	143	137	8	137	137	11	8			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	143	137	8	137	137	11	8			11		
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 %	100	100	100	98	98	89	100			97		
cM capacity (veh/h)	711	731	1081	814	731	1065	1625			1621		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	143	15	63								
Volume Left	1	15	4	55								
Volume Right	1	114	1	1								
cSH	858	989	1625	1621								
Volume to Capacity	0.00*	0.14	0.00*	0.03								
Queue Length 95th (ft)	0	13	0	3								
Control Delay (s/veh)	9.2	9.3	1.9	6.4								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	9.2	9.3	1.9	6.4								
Approach LOS	A	A										
Intersection Summary												
Average Delay			8.0									
Intersection Capacity Utilization			22.9%		ICU Level of Service					A		
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	14	13	105	4	9	1	51	6	1
Future Vol, veh/h	1	0	1	14	13	105	4	9	1	51	6	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	4	0	0	0	0	17	0
Mvmt Flow	1	0	1	15	14	114	4	10	1	55	7	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	144	137	8	137	137	11	8	0	0	11	0	0
Stage 1	118	118	-	19	19	-	-	-	-	-	-	-
Stage 2	26	19	-	118	118	-	-	-	-	-	-	-
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	830	758	1080	838	758	1064	1625	-	-	1621	-	-
Stage 1	891	802	-	1005	884	-	-	-	-	-	-	-
Stage 2	997	884	-	891	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	710	731	1080	815	731	1064	1625	-	-	1621	-	-
Mov Cap-2 Maneuver	710	731	-	815	731	-	-	-	-	-	-	-
Stage 1	889	775	-	1003	882	-	-	-	-	-	-	-
Stage 2	874	882	-	860	775	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	9.2		8		2.1		6.4	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1625	-	-	857	1338	1621	-	-
HCM Lane V/C Ratio	0.003	-	-	0.003	0.107	0.034	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	9.2	8	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.4	0.1	-	-

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

Manassas HEF EA
09/16/2025













Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	1	0	6	22	0
Future Volume (vph)	8	1	0	6	22	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	1810	0
Fl _t Permitted	0.950					
Satd. Flow (perm)	1805	1615	0	1900	1810	0
Link Speed (mph)	20			35	35	
Link Distance (ft)	207			735	313	
Travel Time (s)	7.1			14.3	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	5%	0%
Adj. Flow (vph)	9	1	0	7	24	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	1	0	7	24	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
 09/16/2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	1	0	6	22	0
Future Volume (Veh/h)	8	1	0	6	22	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	1	0	7	24	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	31	24	24			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	31	24	24			
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)	988	1058	1604			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	9	1	7	24		
Volume Left	9	0	0	0		
Volume Right	0	1	0	0		
cSH	988	1058	1700	1700		
Volume to Capacity	0.00*	0.00*	0.00*	0.01		
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)	8.6		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	8	1	0	6	22	0
Future Vol, veh/h	8	1	0	6	22	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	5	0
Mvmt Flow	9	1	0	7	24	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	31	24	-	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	7	-	-	-	-	-
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	988	1058	0	-	-	0
Stage 1	1004	-	0	-	-	0
Stage 2	1021	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	988	1058	-	-	-	-
Mov Cap-2 Maneuver	988	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

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)	-	988	1058	-
HCM Lane V/C Ratio	-	0.009	0.001	-
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: Wakeman Dr & Frontage Rd Entrance

Manassas HEF EA
09/16/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	0	14	101	58	23
Future Volume (vph)	9	0	14	101	58	23
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			0.994		
Satd. Flow (prot)	1357	0	0	1825	1863	1553
Fl _t Permitted	0.950			0.994		
Satd. Flow (perm)	1357	0	0	1825	1863	1553
Link Speed (mph)	20			35	35	
Link Distance (ft)	189			332	652	
Travel Time (s)	6.4			6.5	12.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.94	0.92
Heavy Vehicles (%)	33%	0%	7%	3%	2%	4%
Adj. Flow (vph)	10	0	15	110	62	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	125	62	25
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	22.8%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manassas HEF EA
 09/16/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	0	14	101	58	23
Future Volume (Veh/h)	9	0	14	101	58	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.94	0.92
Hourly flow rate (vph)	10	0	15	110	62	25
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	62	87			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	202	62	87			
tC, single (s)	6.7	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.3			
p0 queue free %	99	100	99			
cM capacity (veh/h)	714	1009	1478			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	10	125	62	25		
Volume Left	10	15	0	0		
Volume Right	0	0	0	25		
cSH	714	1478	1700	1700		
Volume to Capacity	0.01	0.01	0.04	0.01		
Queue Length 95th (ft)	1	1	0	0		
Control Delay (s/veh)	10.1	1.0	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s/veh)	10.1	1.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	1.0					
Intersection Capacity Utilization	22.8%			ICU Level of Service	A	
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	Y
Traffic Vol, veh/h	9	0	14	101	58	23
Future Vol, veh/h	9	0	14	101	58	23
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	92	92	92	92	94	92
Heavy Vehicles, %	33	0	7	3	2	4
Mvmt Flow	10	0	15	110	62	25

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	202	62	87	0	0
Stage 1	62	-	-	-	-
Stage 2	140	-	-	-	-
Critical Hdwy	6.73	6.2	4.17	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-
Follow-up Hdwy	3.797	3.3	2.263	-	-
Pot Cap-1 Maneuver	722	1009	1478	-	-
Stage 1	887	-	-	-	-
Stage 2	816	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	714	1009	1478	-	-
Mov Cap-2 Maneuver	714	-	-	-	-
Stage 1	877	-	-	-	-
Stage 2	816	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.1	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1478	-	714	-	-
HCM Lane V/C Ratio	0.01	-	0.014	-	-
HCM Ctrl Dly (s/v)	7.5	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

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

Manassas HEF EA
09/16/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	53	38	61	61	39
Future Volume (vph)	42	53	38	61	61	39
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			0.947	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1612	1615	1752	1810	1726	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1612	1615	1752	1810	1726	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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	12%	0%	3%	5%	5%	3%
Adj. Flow (vph)	46	58	41	66	66	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	58	41	66	108	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	18.8%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manassas HEF EA
09/16/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	53	38	61	61	39
Future Volume (Veh/h)	42	53	38	61	61	39
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	58	41	66	66	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	235	87	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	235	87	108			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	94	94	97			
cM capacity (veh/h)	711	977	1476			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	46	58	41	66	108	
Volume Left	46	0	41	0	0	
Volume Right	0	58	0	0	42	
cSH	711	977	1476	1700	1700	
Volume to Capacity	0.06	0.06	0.03	0.04	0.06	
Queue Length 95th (ft)	5	5	2	0	0	
Control Delay (s/veh)	10.4	8.9	7.5	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	9.6		2.9		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			4.1			
Intersection Capacity Utilization			18.8%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	42	53	38	61	61	39
Future Vol, veh/h	42	53	38	61	61	39
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	92	92	92	92	92	92
Heavy Vehicles, %	12	0	3	5	5	3
Mvmt Flow	46	58	41	66	66	42

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	235	87	108	0	0
Stage 1	87	-	-	-	-
Stage 2	148	-	-	-	-
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	732	977	1476	-	-
Stage 1	912	-	-	-	-
Stage 2	856	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	712	977	1476	-	-
Mov Cap-2 Maneuver	712	-	-	-	-
Stage 1	886	-	-	-	-
Stage 2	856	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.6	2.9	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1476	-	712	977	-	-
HCM Lane V/C Ratio	0.028	-	0.064	0.059	-	-
HCM Ctrl Dly (s/v)	7.5	-	10.4	8.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.1	-	0.2	0.2	-	-

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	39	25	25	72	25
Future Volume (vph)	13	39	25	25	72	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899		0.932			
Flt Protected	0.988					0.964
Satd. Flow (prot)	1688	0	1771	0	0	1717
Flt Permitted	0.988					0.964
Satd. Flow (perm)	1688	0	1771	0	0	1717
Link Speed (mph)	35		25			25
Link Distance (ft)	2530		410			1111
Travel Time (s)	49.3		11.2			30.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	9%	0%
Adj. Flow (vph)	14	42	27	27	78	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	54	0	0	105
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	1.04	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	22.0%		ICU Level of Service A			
Analysis Period (min)	15					





























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

Manassas HEF EA
 09/16/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	39	25	25	72	25
Future Volume (Veh/h)	13	39	25	25	72	25
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	42	27	27	78	27
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	224	41			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	224	41			54	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	98	96			95	
cM capacity (veh/h)	729	1036			1508	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	56	54	105			
Volume Left	14	0	78			
Volume Right	42	27	0			
cSH	938	1700	1508			
Volume to Capacity	0.06	0.03	0.05			
Queue Length 95th (ft)	5	0	4			
Control Delay (s/veh)	9.1	0.0	5.7			
Lane LOS	A		A			
Approach Delay (s/veh)	9.1	0.0	5.7			
Approach LOS	A					
Intersection Summary						
Average Delay			5.1			
Intersection Capacity Utilization		22.0%		ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
9: Piper Ln & Nokesville Rd

Manassas HEF EA
09/16/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	79	2123	213	151	1163	67	66	9	51	52	15	41
Future Volume (vph)	79	2123	213	151	1163	67	66	9	51	52	15	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	750		180	360		370	0		180	0		140
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.963		0.950	0.972	
Satd. Flow (prot)	1719	4893	1568	1641	4673	1583	1441	1518	1179	1559	1660	1568
Flt Permitted	0.950			0.950			0.732	0.796		0.728	0.854	
Satd. Flow (perm)	1719	4893	1568	1641	4673	1583	1110	1255	1179	1195	1459	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			85			85			85
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1304			6231			1283			607	
Travel Time (s)		19.8			94.4			35.0			16.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.92	0.92
Heavy Vehicles (%)	5%	6%	3%	10%	11%	2%	19%	0%	37%	10%	0%	3%
Adj. Flow (vph)	86	2308	232	164	1264	73	72	10	55	56	16	45
Shared Lane Traffic (%)							44%			37%		
Lane Group Flow (vph)	86	2308	232	164	1264	73	40	42	55	35	37	45
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)		24			24			12			12	
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
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	

Lanes, Volumes, Timings
9: Piper Ln & Nokesville Rd

Manassas HEF EA
09/16/2025

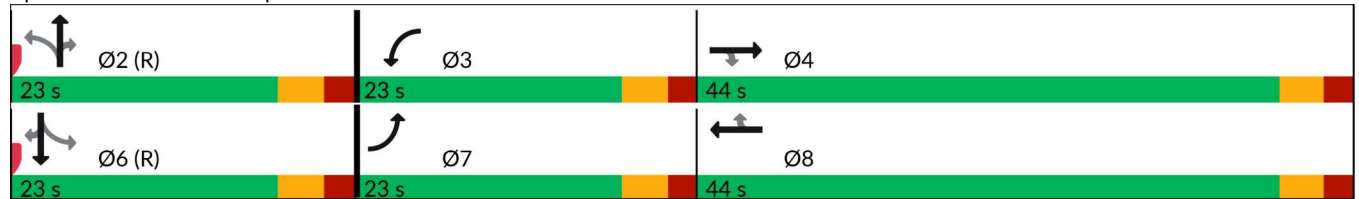


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	23.0	44.0	44.0	23.0	44.0	44.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	25.6%	48.9%	48.9%	25.6%	48.9%	48.9%	25.6%	25.6%	25.6%	25.6%	25.6%	25.6%
Maximum Green (s)	18.0	39.0	39.0	18.0	39.0	39.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	9.8	43.2	43.2	13.8	49.4	49.4	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.11	0.48	0.48	0.15	0.55	0.55	0.20	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.46	0.98	0.28	0.65	0.49	0.08	0.18	0.17	0.18	0.15	0.13	0.12
Control Delay (s/veh)	44.7	40.0	6.3	47.6	14.4	2.6	32.4	31.9	4.5	31.6	31.0	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.7	40.0	6.3	47.6	14.4	2.6	32.4	31.9	4.5	31.6	31.0	2.4
LOS	D	D	A	D	B	A	C	C	A	C	C	A
Approach Delay (s/veh)		37.2			17.5			21.0			20.2	
Approach LOS		D			B			C			C	
90th %ile Green (s)	13.7	39.0	39.0	18.0	43.3	43.3	18.0	18.0	18.0	18.0	18.0	18.0
90th %ile Term Code	Gap	Max	Max	Max	Hold	Hold	Coord	Coord	Coord	Coord	Coord	Coord
70th %ile Green (s)	11.4	40.5	40.5	16.5	45.6	45.6	18.0	18.0	18.0	18.0	18.0	18.0
70th %ile Term Code	Gap	Max	Max	Gap	Hold	Hold	Coord	Coord	Coord	Coord	Coord	Coord
50th %ile Green (s)	9.8	42.8	42.8	14.2	47.2	47.2	18.0	18.0	18.0	18.0	18.0	18.0
50th %ile Term Code	Gap	Max	Max	Gap	Hold	Hold	Coord	Coord	Coord	Coord	Coord	Coord
30th %ile Green (s)	8.2	45.1	45.1	11.9	48.8	48.8	18.0	18.0	18.0	18.0	18.0	18.0
30th %ile Term Code	Gap	Max	Max	Gap	Hold	Hold	Coord	Coord	Coord	Coord	Coord	Coord
10th %ile Green (s)	0.0	48.4	48.4	8.6	62.0	62.0	18.0	18.0	18.0	18.0	18.0	18.0
10th %ile Term Code	Skip	Max	Max	Gap	Hold	Hold	Coord	Coord	Coord	Coord	Coord	Coord
Queue Length 50th (ft)	47	458	22	88	162	0	20	21	0	17	17	0
Queue Length 95th (ft)	89	#642	69	146	222	18	50	51	16	45	46	9
Internal Link Dist (ft)		1224			6151			1203			527	
Turn Bay Length (ft)	750		180	360		370			180			140
Base Capacity (vph)	343	2346	834	328	2563	906	222	251	303	239	291	381
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.98	0.28	0.50	0.49	0.08	0.18	0.17	0.18	0.15	0.13	0.12

Intersection Summary





























Area Type:	Other	
Cycle Length:	90	
Actuated Cycle Length:	90	
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle:	90	
Control Type:	Actuated-Coordinated	
Maximum v/c Ratio:	0.98	
Intersection Signal Delay (s/veh):	29.5	Intersection LOS: C
Intersection Capacity Utilization	70.6%	ICU Level of Service C
Analysis Period (min)	15	
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 9: Piper Ln & Nokesville Rd



HCM Signalized Intersection Capacity Analysis
 9: Piper Ln & Nokesville Rd

Manassas HEF EA
 09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	79	2123	213	151	1163	67	66	9	51	52	15	41
Future Volume (vph)	79	2123	213	151	1163	67	66	9	51	52	15	41
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1719	4893	1568	1641	4673	1583	1441	1519	1179	1559	1661	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.73	0.80	1.00	0.73	0.85	1.00
Satd. Flow (perm)	1719	4893	1568	1641	4673	1583	1110	1255	1179	1195	1458	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.92	0.92
Adj. Flow (vph)	86	2308	232	164	1264	73	72	10	55	56	16	45
RTOR Reduction (vph)	0	0	81	0	0	33	0	0	45	0	0	37
Lane Group Flow (vph)	86	2308	151	164	1264	40	40	42	10	35	37	9
Heavy Vehicles (%)	5%	6%	3%	10%	11%	2%	19%	0%	37%	10%	0%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	8.6	44.2	44.2	13.8	49.4	49.4	17.0	17.0	17.0	17.0	17.0	17.0
Effective Green, g (s)	8.6	44.2	44.2	13.8	49.4	49.4	17.0	17.0	17.0	17.0	17.0	17.0
Actuated g/C Ratio	0.10	0.49	0.49	0.15	0.55	0.55	0.19	0.19	0.19	0.19	0.19	0.19
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	164	2403	770	251	2564	868	209	237	222	225	275	296
v/s Ratio Prot	0.05	c0.47		c0.10	0.27							
v/s Ratio Perm			0.10			0.03	c0.04	0.03	0.01	0.03	0.03	0.01
v/c Ratio	0.52	0.96	0.20	0.65	0.49	0.05	0.19	0.18	0.05	0.16	0.13	0.03
Uniform Delay, d1	38.8	22.1	12.9	35.8	12.6	9.4	30.7	30.6	29.9	30.5	30.4	29.8
Progression 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
Incremental Delay, d2	3.0	10.7	0.1	6.0	0.2	0.0	2.0	1.6	0.4	1.5	1.0	0.2
Delay (s)	41.8	32.7	13.0	41.8	12.7	9.4	32.7	32.3	30.3	32.0	31.4	29.9
Level of Service	D	C	B	D	B	A	C	C	C	C	C	C
Approach Delay (s/veh)		31.3			15.7			31.6			31.0	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			25.9									C
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			90.0						15.0			
Intersection Capacity Utilization			70.6%									C
ICU Level of Service												
Analysis Period (min)			15									
c Critical Lane Group												

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

Manassas HEF EA
 09/16/2025












Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	110	0	0	81
Future Volume (vph)	0	0	110	0	0	81
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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	5%	0%	0%	3%
Adj. Flow (vph)	0	0	120	0	0	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	120	0	0	88
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	9.1%
	ICU Level of Service A
Analysis Period (min)	15

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

Manassas HEF EA
 09/16/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	110	0	0	81
Future Volume (Veh/h)	0	0	110	0	0	81
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	120	0	0	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	208	120			120	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208	120			120	
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)	785	937			1480	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	120	88			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1480			
Volume to Capacity	0.00	0.07	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			9.1%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	110	0	0	81
Future Vol, veh/h	0	0	110	0	0	81
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	5	0	0	3
Mvmt Flow	0	0	120	0	0	88










Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	208	120	0	0	120	0
Stage 1	120	-	-	-	-	-
Stage 2	88	-	-	-	-	-
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	785	937	-	-	1480	-
Stage 1	910	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	785	937	-	-	1480	-
Mov Cap-2 Maneuver	785	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	940	-	-	-	-	-

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)	-	-	-	1480
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

Manassas HEF EA
 09/16/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	110	0	0	81
Future Volume (vph)	0	0	110	0	0	81
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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	5%	0%	0%	3%
Adj. Flow (vph)	0	0	120	0	0	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	120	0	0	88
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	9.1%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manassas HEF EA
 09/16/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	110	0	0	81
Future Volume (Veh/h)	0	0	110	0	0	81
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	120	0	0	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	208	120			120	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208	120			120	
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)	785	937			1480	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	120	88			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1480			
Volume to Capacity	0.00	0.07	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	9.1%		ICU Level of Service	A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	110	0	0	81
Future Vol, veh/h	0	0	110	0	0	81
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	5	0	0	3
Mvmt Flow	0	0	120	0	0	88

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	208	120	0	0	120	0
Stage 1	120	-	-	-	-	-
Stage 2	88	-	-	-	-	-
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	785	937	-	-	1480	-
Stage 1	910	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	785	937	-	-	1480	-
Mov Cap-2 Maneuver	785	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	940	-	-	-	-	-

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)	-	-	1480	-
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	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)	33	81	99	11	0	0
Future Volume (vph)	33	81	99	11	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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	5%	0%	0%	0%
Adj. Flow (vph)	36	88	108	12	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	124	120	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	16.1%
Analysis Period (min)	15
	ICU Level of Service A

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

Manassas HEF EA
 09/16/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	33	81	99	11	0	0
Future Volume (Veh/h)	33	81	99	11	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	88	108	12	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	120				274	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	120				274	114
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)	1480				702	944
Direction, Lane #						
	SE 1	NW 1	SW 1			
Volume Total	124	120	0			
Volume Left	36	0	0			
Volume Right	0	12	0			
cSH	1480	1700	1700			
Volume to Capacity	0.02	0.07	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		16.1%		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	33	81	99	11	0	0
Future Vol, veh/h	33	81	99	11	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	92	92	92	92	92	92
Heavy Vehicles, %	0	3	5	0	0	0
Mvmt Flow	36	88	108	12	0	0




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	120	0	-	0	274 114
Stage 1	-	-	-	-	114 -
Stage 2	-	-	-	-	160 -
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	1480	-	-	-	720 944
Stage 1	-	-	-	-	916 -
Stage 2	-	-	-	-	874 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1480	-	-	-	701 944
Mov Cap-2 Maneuver	-	-	-	-	701 -
Stage 1	-	-	-	-	892 -
Stage 2	-	-	-	-	874 -

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	2.2	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1480	-
HCM Lane V/C Ratio	-	-	0.024	-
HCM Ctrl Dly (s/v)	-	-	7.5	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.1	-

Lanes, Volumes, Timings
15: Gateway Blvd

Manassas HEF EA
09/16/2025




















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	20	3	1	76	37	0	0	3	14	0	58
Future Volume (vph)	22	20	3	1	76	37	0	0	3	14	0	58
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
Frt		0.982			0.951			0.865				0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1703	3181	0	1805	3313	0	0	1644	0	0	1656	1509
Flt Permitted	0.950			0.950							0.950	
Satd. Flow (perm)	1703	3181	0	1805	3313	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	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	13%	0%	0%	2%	7%	0%	0%	0%	9%	0%	7%
Adj. Flow (vph)	24	22	3	1	83	40	0	0	3	15	0	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	25	0	1	123	0	0	3	0	0	15	63
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	22.0%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
15: Gateway Blvd

Manassas HEF EA
09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	20	3	1	76	37	0	0	3	14	0	58
Future Volume (Veh/h)	22	20	3	1	76	37	0	0	3	14	0	58
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	22	3	1	83	40	0	0	3	15	0	63
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	123			25			147	197	13	167	178	62
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	123			25			147	197	13	167	178	62
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	94
cM capacity (veh/h)	1433			1603			751	690	1071	750	707	975
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	24	15	10	1	55	68	3	78				
Volume Left	24	0	0	1	0	0	0	15				
Volume Right	0	0	3	0	0	40	3	63				
cSH	1433	1700	1700	1603	1700	1700	1071	1207				
Volume to Capacity	0.02	0.00*	0.00*	0.00*	0.03	0.04	0.00*	0.06				
Queue Length 95th (ft)	1	0	0	0	0	0	0	5				
Control Delay (s/veh)	7.6	0.0	0.0	7.2	0.0	0.0	8.4	9.1				
Lane LOS	A			A			A	A				
Approach Delay (s/veh)	3.7			0.1			8.4	9.1				
Approach LOS							A	A				
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			22.0%		ICU Level of Service			A				
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↷		↶	↶↷			↷			↶	↶
Traffic Vol, veh/h	22	20	3	1	76	37	0	0	3	14	0	58
Future Vol, veh/h	22	20	3	1	76	37	0	0	3	14	0	58
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	13	0	0	2	7	0	0	0	9	0	7
Mvmt Flow	24	22	3	1	83	40	0	0	3	15	0	63

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	25	0	0	116	197	13	164	178	62
Stage 1	-	-	-	-	-	-	72	72	-	105	105	-
Stage 2	-	-	-	-	-	-	44	125	-	59	73	-
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	1433	-	-	1603	-	-	854	702	1070	766	719	974
Stage 1	-	-	-	-	-	-	935	839	-	869	812	-
Stage 2	-	-	-	-	-	-	970	796	-	925	838	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1433	-	-	1603	-	-	788	689	1070	754	706	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	788	689	-	754	706	-
Stage 1	-	-	-	-	-	-	919	825	-	854	811	-
Stage 2	-	-	-	-	-	-	907	795	-	907	824	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	3.7			0.1			8.4			9.2		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1070	1433	-	-	1603	-	-	754	974
HCM Lane V/C Ratio	0.003	0.017	-	-	0.001	-	-	0.02	0.065
HCM Ctrl Dly (s/v)	8.4	7.6	-	-	7.2	-	-	9.9	9
HCM Lane LOS	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q (veh)	0	0.1	-	-	0	-	-	0.1	0.2



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	99	113	270	160	
Future Volume (vph)	99	113	270	160	
Ideal Flow (vphpl)	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	
Fr _t		0.850		0.865	
Fl _t Protected					
Satd. Flow (prot)	1226	1509	1827	1550	
Fl _t Permitted					
Satd. Flow (perm)	1226	1509	1827	1550	
Right Turn on Red		Yes		No	
Satd. Flow (RTOR)		127			
Link Speed (mph)			25		
Link Distance (ft)			137		
Travel Time (s)			3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	55%	7%	4%	6%	
Adj. Flow (vph)	108	123	293	174	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	108	123	293	174	
Enter Blocked Intersection	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	
Median Width(ft)			12		
Link Offset(ft)			-16		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	
Turning Speed (mph)	25	9		9	
Turn Type	Prot	Free	NA	Prot	
Protected Phases	2		4	6	8
Permitted Phases		Free			
Minimum Split (s)	23.0		23.0	10.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50%
Maximum Green (s)	25.0		25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Walk Time (s)			7.0		7.0
Flash Don't Walk (s)			11.0		11.0
Pedestrian Calls (#/hr)			0		0
Act Effct Green (s)	25.0	60.0	25.0	25.0	
Actuated g/C Ratio	0.42	1.00	0.42	0.42	
v/c Ratio	0.21	0.08	0.39	0.27	
Control Delay (s/veh)	12.6	0.1	13.9	13.0	
Queue Delay	0.0	0.0	0.0	0.0	

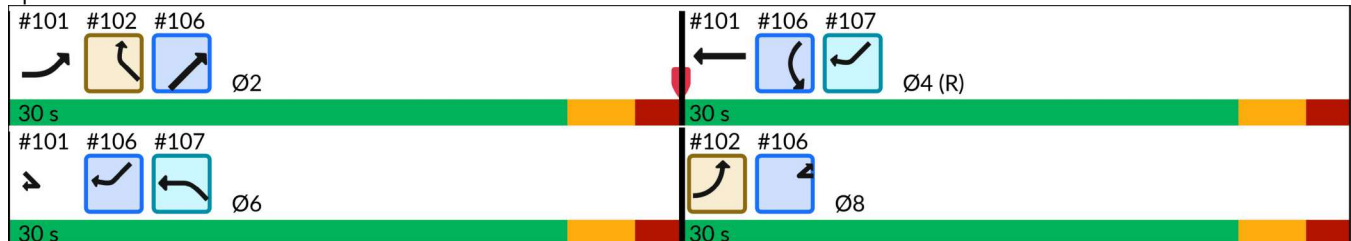


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	12.6	0.1	13.9	13.0	
LOS	B	A	B	B	
Approach Delay (s/veh)			13.9		
Approach LOS			B		
Queue Length 50th (ft)	24	0	83	40	
Queue Length 95th (ft)	53	0	140	77	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	510	1509	761	645	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.21	0.08	0.39	0.27	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.39
Intersection Signal Delay (s/veh):	11.0
Intersection LOS:	B
Intersection Capacity Utilization:	32.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 101: WB Clover Hill to SB PWP/SB PWP to EB Clover Hill & Clover Hill Rd





Movement	EBL	EBR	WBT	SER
Lane Configurations				
Traffic Volume (vph)	99	113	270	160
Future Volume (vph)	99	113	270	160
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.87
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1226	1509	1827	1550
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1226	1509	1827	1550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	123	293	174
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	108	123	293	174
Heavy Vehicles (%)	55%	7%	4%	6%
Turn Type	Prot	Free	NA	Prot
Protected Phases	2		4	6
Permitted Phases		Free		
Actuated Green, G (s)	25.0	60.0	25.0	25.0
Effective Green, g (s)	25.0	60.0	25.0	25.0
Actuated g/C Ratio	0.42	1.00	0.42	0.42
Clearance Time (s)	5.0		5.0	5.0
Lane Grp Cap (vph)	510	1509	761	645
v/s Ratio Prot	0.09		c0.16	c0.11
v/s Ratio Perm		0.08		
v/c Ratio	0.21	0.08	0.39	0.27
Uniform Delay, d1	11.2	0.0	12.2	11.5
Progression Factor	1.00	1.00	0.99	1.00
Incremental Delay, d2	0.9	0.1	1.4	1.0
Delay (s)	12.1	0.1	13.5	12.5
Level of Service	B	A	B	B
Approach Delay (s/veh)			13.5	
Approach LOS			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	51	0	0	0	0	99		
Future Volume (vph)	51	0	0	0	0	99		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected	0.950							
Satd. Flow (prot)	1517	0	0	0	0	1226		
Flt Permitted	0.950							
Satd. Flow (perm)	1517	0	0	0	0	1226		
Right Turn on Red	No	No		No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	246		392		85			
Travel Time (s)	6.7		10.7		2.3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	19%	0%	0%	0%	0%	55%		
Adj. Flow (vph)	55	0	0	0	0	108		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	55	0	0	0	0	108		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	L NA	Right	Left	Right	Left	Right		
Median Width(ft)	12		0		0			
Link Offset(ft)	0		0		12			
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	15	25		
Turn Type	Prot					Prot		
Protected Phases	8					2	4	6
Permitted Phases								
Minimum Split (s)	23.0					23.0	23.0	10.0
Total Split (s)	30.0					30.0	30.0	30.0
Total Split (%)	50.0%					50.0%	50%	50%
Maximum Green (s)	25.0					25.0	25.0	25.0
Yellow Time (s)	3.0					3.0	3.0	3.0
All-Red Time (s)	2.0					2.0	2.0	2.0
Lost Time Adjust (s)	0.0					0.0		
Total Lost Time (s)	5.0					5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)	7.0						7.0	
Flash Don't Walk (s)	11.0						11.0	
Pedestrian Calls (#/hr)	0						0	
Act Effct Green (s)	25.0					25.0		
Actuated g/C Ratio	0.42					0.42		
v/c Ratio	0.09					0.21		
Control Delay (s/veh)	11.1					2.3		
Queue Delay	0.0					0.0		

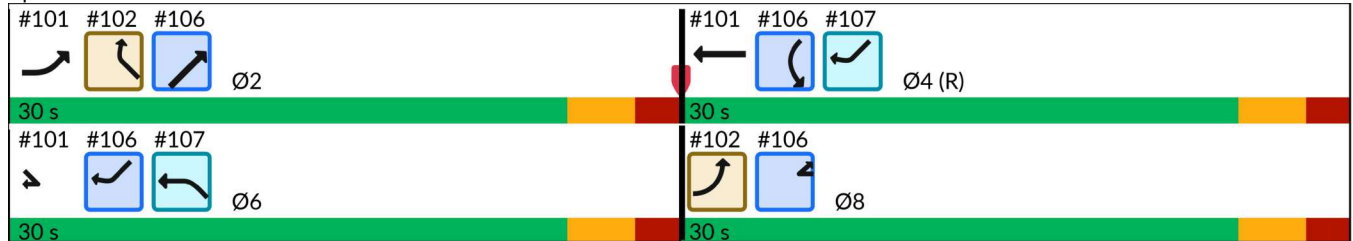


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	11.1							2.3
LOS	B							A
Approach Delay (s/veh)	11.1				2.3			
Approach LOS	B				A			
Queue Length 50th (ft)	12							2
Queue Length 95th (ft)	30							3
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	632							510
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.09							0.21

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.39
Intersection Signal Delay (s/veh):	5.3
Intersection LOS:	A
Intersection Capacity Utilization:	15.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 102: SB PWP to WB Clover Hill & Clover Hill Rd





Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations	↖					↗
Traffic Volume (vph)	51	0	0	0	0	99
Future Volume (vph)	51	0	0	0	0	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0					5.0
Lane Util. Factor	1.00					1.00
Fr _t	1.00					1.00
Fl _t Protected	0.95					1.00
Satd. Flow (prot)	1517					1226
Fl _t Permitted	0.95					1.00
Satd. Flow (perm)	1517					1226
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	0	0	0	0	108
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	55	0	0	0	0	108
Heavy Vehicles (%)	19%	0%	0%	0%	0%	55%
Turn Type	Prot					Prot
Protected Phases	8					2
Permitted Phases						
Actuated Green, G (s)	25.0					25.0
Effective Green, g (s)	25.0					25.0
Actuated g/C Ratio	0.42					0.42
Clearance Time (s)	5.0					5.0
Lane Grp Cap (vph)	632					510
v/s Ratio Prot	c0.04					c0.09
v/s Ratio Perm						
v/c Ratio	0.09					0.21
Uniform Delay, d ₁	10.6					11.2
Progression Factor	1.00					0.12
Incremental Delay, d ₂	0.3					0.9
Delay (s)	10.9					2.2
Level of Service	B					A
Approach Delay (s/veh)	10.9		0.0		2.2	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	56	0	0	113
Future Volume (vph)	0	0	56	0	0	113
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						0.865
Fl _t Protected			0.950			
Satd. Flow (prot)	0	0	1583	0	0	1536
Fl _t Permitted			0.950			
Satd. Flow (perm)	0	0	1583	0	0	1536
Link Speed (mph)	30		30		30	
Link Distance (ft)	720		202		211	
Travel Time (s)	16.4		4.6		4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	14%	0%	0%	7%
Adj. Flow (vph)	0	0	61	0	0	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	61	0	0	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)	0		12		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	15	9
Sign Control	Free		Yield		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.4%
	ICU Level of Service A
Analysis Period (min)	15



Movement	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	0	0	56	0	0	113
Future Volume (Veh/h)	0	0	56	0	0	113
Sign Control	Free		Yield		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	61	0	0	123
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	211					
pX, platoon unblocked						
vC, conflicting volume			123	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			123	0	0	
tC, single (s)			6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)			3.6	3.3	2.2	
p0 queue free %			93	100	100	
cM capacity (veh/h)			844	1091	1636	
Direction, Lane #	SE 1	NE 1				
Volume Total	61	123				
Volume Left	61	0				
Volume Right	0	0				
cSH	844	1700				
Volume to Capacity	0.07	0.07				
Queue Length 95th (ft)	6	0				
Control Delay (s/veh)	9.6	0.0				
Lane LOS	A					
Approach Delay (s/veh)	9.6	0.0				
Approach LOS	A					
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			30.4%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	46	65	100	231
Future Volume (vph)	46	65	100	231
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00
Fr _t	0.865			0.850
Flt Protected				
Satd. Flow (prot)	1442	1652	1759	1538
Flt Permitted				
Satd. Flow (perm)	1442	1652	1759	1538
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				251
Link Speed (mph)		25		
Link Distance (ft)		134		
Travel Time (s)		3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	14%	15%	8%	5%
Adj. Flow (vph)	50	71	109	251
Shared Lane Traffic (%)				
Lane Group Flow (vph)	50	71	109	251
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Right	Left	Left	Right
Median Width(ft)		12		
Link Offset(ft)		-6		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	9
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Minimum Split (s)	23.0	23.0	23.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Walk Time (s)	7.0		7.0	
Flash Don't Walk (s)	11.0		11.0	
Pedestrian Calls (#/hr)	0		0	
Act Effct Green (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
v/c Ratio	0.08	0.10	0.15	0.32
Control Delay (s/veh)	11.1	8.9	11.6	3.1
Queue Delay	0.0	0.0	0.0	0.0

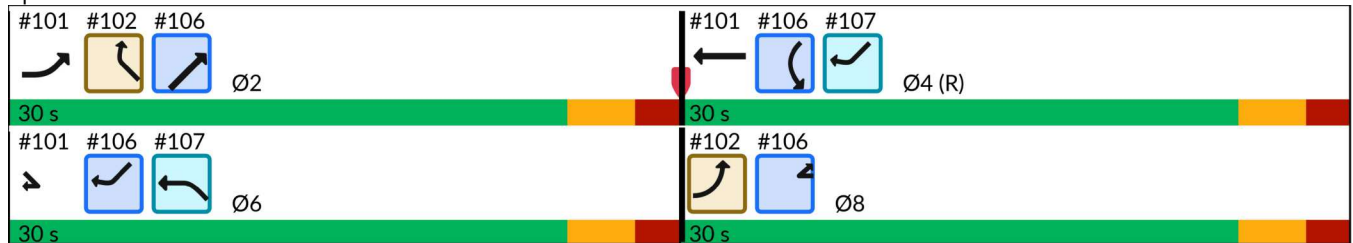


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.1	8.9	11.6	3.1
LOS	B	A	B	A
Approach Delay (s/veh)	8.9			
Approach LOS	A			
Queue Length 50th (ft)	10	12	23	0
Queue Length 95th (ft)	28	28	50	35
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	600	688	732	787
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.08	0.10	0.15	0.32

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.39
Intersection Signal Delay (s/veh):	6.7
Intersection LOS:	A
Intersection Capacity Utilization:	18.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 106: NB PWP to EB Clover Hill & Clover Hill Rd





Movement	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	46	65	100	231
Future Volume (vph)	46	65	100	231
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	0.87	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1442	1652	1759	1538
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1442	1652	1759	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	71	109	251
RTOR Reduction (vph)	0	0	0	146
Lane Group Flow (vph)	50	71	109	105
Heavy Vehicles (%)	14%	15%	8%	5%
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Actuated Green, G (s)	25.0	25.0	25.0	25.0
Effective Green, g (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	600	688	732	640
v/s Ratio Prot	0.03	0.04	c0.06	c0.07
v/s Ratio Perm				
v/c Ratio	0.08	0.10	0.15	0.16
Uniform Delay, d1	10.6	10.7	10.9	11.0
Progression Factor	1.00	0.78	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.4	0.5
Delay (s)	10.8	8.6	11.3	11.5
Level of Service	B	A	B	B
Approach Delay (s/veh)		8.6		
Approach LOS		A		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	0	0	226	0	0	100		
Future Volume (vph)	0	0	226	0	0	100		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected			0.950					
Satd. Flow (prot)	0	0	1736	0	0	1759		
Flt Permitted			0.950					
Satd. Flow (perm)	0	0	1736	0	0	1759		
Right Turn on Red		No	No	No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	390		186		73			
Travel Time (s)	10.6		5.1		2.0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	0%	0%	4%	0%	0%	8%		
Adj. Flow (vph)	0	0	246	0	0	109		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	246	0	0	109		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Right		
Median Width(ft)	0		12		0			
Link Offset(ft)	0		0		12			
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	15	9		
Turn Type			Prot			Prot		
Protected Phases			6			4	2	8
Permitted Phases								
Minimum Split (s)			10.0			23.0	23.0	23.0
Total Split (s)			30.0			30.0	30.0	30.0
Total Split (%)			50.0%			50.0%	50%	50%
Maximum Green (s)			25.0			25.0	25.0	25.0
Yellow Time (s)			3.0			3.0	3.0	3.0
All-Red Time (s)			2.0			2.0	2.0	2.0
Lost Time Adjust (s)			0.0			0.0		
Total Lost Time (s)			5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)						7.0		7.0
Flash Don't Walk (s)						11.0		11.0
Pedestrian Calls (#/hr)						0		0
Act Effct Green (s)			25.0			25.0		
Actuated g/C Ratio			0.42			0.42		
v/c Ratio			0.34			0.15		
Control Delay (s/veh)			13.6			1.6		
Queue Delay			0.0			0.0		

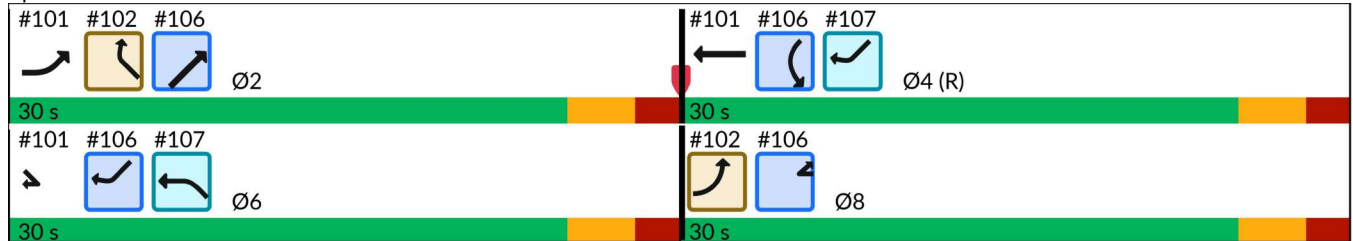


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			13.6			1.6		
LOS			B			A		
Approach Delay (s/veh)			13.6		1.6			
Approach LOS			B		A			
Queue Length 50th (ft)			58			2		
Queue Length 95th (ft)			105			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			723			732		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.34			0.15		

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.39
Intersection Signal Delay (s/veh):	9.9
Intersection LOS:	A
Intersection Capacity Utilization:	28.6%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 107: NB PWP to WB Clover Hill

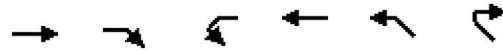


HCM Signalized Intersection Capacity Analysis
 107: NB PWP to WB Clover Hill

Manassas HEF EA
 09/16/2025



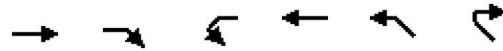
Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations			↖			↗
Traffic Volume (vph)	0	0	226	0	0	100
Future Volume (vph)	0	0	226	0	0	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			1736			1759
Flt Permitted			0.95			1.00
Satd. Flow (perm)			1736			1759
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	246	0	0	109
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	246	0	0	109
Heavy Vehicles (%)	0%	0%	4%	0%	0%	8%
Turn Type			Prot			Prot
Protected Phases			6			4
Permitted Phases						
Actuated Green, G (s)			25.0			25.0
Effective Green, g (s)			25.0			25.0
Actuated g/C Ratio			0.42			0.42
Clearance Time (s)			5.0			5.0
Lane Grp Cap (vph)			723			732
v/s Ratio Prot			c0.14			c0.06
v/s Ratio Perm						
v/c Ratio			0.34			0.15
Uniform Delay, d1			11.9			10.9
Progression Factor			1.00			0.11
Incremental Delay, d2			1.3			0.4
Delay (s)			13.2			1.6
Level of Service			B			A
Approach Delay (s/veh)	0.0		13.2		1.6	
Approach LOS	A		B		A	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			9.6		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.24			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			28.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (vph)	0	0	0	231	85	0
Future Volume (vph)	0	0	0	231	85	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)	0	0	0	1810	1101	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1810	1101	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	548			316	253	
Travel Time (s)	12.5			7.2	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	64%	0%
Adj. Flow (vph)	0	0	0	251	92	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	251	92	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	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)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.3%
Analysis Period (min)	15
	ICU Level of Service A



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (veh/h)	0	0	0	231	85	0
Future Volume (Veh/h)	0	0	0	231	85	0
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	251	92	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)	316					
pX, platoon unblocked						
vC, conflicting volume			0	251	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	251	0	
tC, single (s)			4.1	7.0	6.2	
tC, 2 stage (s)						
tF (s)			2.2	4.1	3.3	
p0 queue free %			100	85	100	
cM capacity (veh/h)			1636	621	1091	
Direction, Lane #	WB 1	NW 1				
Volume Total	251	92				
Volume Left	0	92				
Volume Right	0	0				
cSH	1700	621				
Volume to Capacity	0.15	0.15				
Queue Length 95th (ft)	0	13				
Control Delay (s/veh)	0.0	11.8				
Lane LOS			B			
Approach Delay (s/veh)	0.0	11.8				
Approach LOS			B			
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			36.3%	ICU Level of Service		A
Analysis Period (min)			15			



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (vph)	297	1	5	62	0	135
Future Volume (vph)	297	1	5	62	0	135
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		0.953				
Satd. Flow (prot)	0	1775	1900	1524	1900	1495
Fl _t Permitted		0.953				
Satd. Flow (perm)	0	1775	1900	1524	1900	1495
Link Speed (mph)		35	35		25	
Link Distance (ft)		4575	551		921	
Travel Time (s)		89.1	10.7		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	6%	0%	8%
Adj. Flow (vph)	323	1	5	67	0	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	324	5	67	0	147
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	27.0%
	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
 09/16/2025



















Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (veh/h)	297	1	5	62	0	135
Future Volume (Veh/h)	297	1	5	62	0	135
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	323	1	5	67	0	147
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	921					
pX, platoon unblocked						
vC, conflicting volume	3	0	0	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3	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 %	66	100	99	94	100	
cM capacity (veh/h)	952	900	900	1073	1636	
Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2	
Volume Total	324	5	67	0	147	
Volume Left	323	0	0	0	0	
Volume Right	0	0	67	0	147	
cSH	952	900	1073	1700	1700	
Volume to Capacity	0.34	0.00*	0.06	0.00	0.09	
Queue Length 95th (ft)	38	0	5	0	0	
Control Delay (s/veh)	10.7	9.0	8.6	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	10.7	8.6		0.0		
Approach LOS	B	A				
Intersection Summary						
Average Delay			7.5			
Intersection Capacity Utilization			27.0%	ICU Level of Service	A	
Analysis Period (min)			15			

* Value less than 0.01.

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

















Manassas HEF EA
 09/16/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	5	5	5	4	81	3	10	15	75	9	0
Future Volume (vph)	9	5	5	5	4	81	3	10	15	75	9	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
Fr _t		0.966			0.878			0.928				
Fl _t Protected		0.976			0.997			0.995			0.957	
Satd. Flow (prot)	0	1791	0	0	1577	0	0	1691	0	0	1736	0
Fl _t Permitted		0.976			0.997			0.995			0.957	
Satd. Flow (perm)	0	1791	0	0	1577	0	0	1691	0	0	1736	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	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	6%	0%	0%	7%	4%	11%	0%
Adj. Flow (vph)	10	5	5	5	4	88	3	11	16	82	10	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	97	0	0	30	0	0	92	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	23.5%
	ICU Level of Service A
Analysis Period (min)	15

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

Manassas HEF EA
 09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	5	5	5	4	81	3	10	15	75	9	0
Future Volume (Veh/h)	9	5	5	5	4	81	3	10	15	75	9	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	5	5	5	4	88	3	11	16	82	10	0
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	201	207	10	207	199	19	10			27		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	201	207	10	207	199	19	10			27		
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	100	99	99	92	100			95		
cM capacity (veh/h)	666	656	1077	717	663	1048	1623			1574		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	20	97	30	92								
Volume Left	10	5	3	82								
Volume Right	5	88	16	0								
cSH	733	1000	1623	1574								
Volume to Capacity	0.03	0.10	0.00*	0.05								
Queue Length 95th (ft)	2	8	0	4								
Control Delay (s/veh)	10.0	9.0	0.7	6.6								
Lane LOS	B	A	A	A								
Approach Delay (s/veh)	10.0	9.0	0.7	6.6								
Approach LOS	B	A										
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			23.5%		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	9	5	5	5	4	81	3	10	15	75	9	0
Future Vol, veh/h	9	5	5	5	4	81	3	10	15	75	9	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	6	0	0	7	4	11	0
Mvmt Flow	10	5	5	5	4	88	3	11	16	82	10	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	201	207	10	204	199	19	10	0	0	27	0	0
Stage 1	174	174	-	25	25	-	-	-	-	-	-	-
Stage 2	27	33	-	179	174	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.26	4.1	-	-	4.14	-	-
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	-	-	2.236	-	-
Pot Cap-1 Maneuver	762	693	1077	758	700	1048	1623	-	-	1574	-	-
Stage 1	833	759	-	998	878	-	-	-	-	-	-	-
Stage 2	996	872	-	827	759	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	666	656	1077	719	662	1048	1623	-	-	1574	-	-
Mov Cap-2 Maneuver	666	656	-	719	662	-	-	-	-	-	-	-
Stage 1	831	720	-	996	876	-	-	-	-	-	-	-
Stage 2	906	870	-	774	720	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	10		8.4		0.8		6.6	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1623	-	-	737	1164	1574	-	-
HCM Lane V/C Ratio	0.002	-	-	0.028	0.084	0.052	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	10	8.4	7.4	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.1	0.3	0.2	-	-

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

Manassas HEF EA
09/16/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	0	0	23	19	0
Future Volume (vph)	5	0	0	23	19	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
Frts						
Flt Protected	0.950					
Satd. Flow (prot)	1805	1900	0	1827	1810	0
Flt Permitted	0.950					
Satd. Flow (perm)	1805	1900	0	1827	1810	0
Link Speed (mph)	20			35	35	
Link Distance (ft)	207			735	313	
Travel Time (s)	7.1			14.3	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	4%	5%	0%
Adj. Flow (vph)	5	0	0	25	21	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	0	25	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
 09/16/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	0	0	23	19	0
Future Volume (Veh/h)	5	0	0	23	19	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	0	25	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	46	21	21			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	46	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)	969	1062	1608			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	5	0	25	21		
Volume Left	5	0	0	0		
Volume Right	0	0	0	0		
cSH	969	1700	1700	1700		
Volume to Capacity	0.00*	0.00	0.01	0.01		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s/veh)	8.7	0.0	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	0.9					
Intersection Capacity Utilization	13.3%			ICU Level of Service	A	
Analysis Period (min)	15					

* Value less than 0.01.

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	5	0	0	23	19	0
Future Vol, veh/h	5	0	0	23	19	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	4	5	0
Mvmt Flow	5	0	0	25	21	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	46	21	-	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	25	-	-	-	-	-
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	969	1062	0	-	-	0
Stage 1	1007	-	0	-	-	0
Stage 2	1003	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	969	1062	-	-	-	-
Mov Cap-2 Maneuver	969	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	1003	-	-	-	-	-

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)	-	969	-	-
HCM Lane V/C Ratio	-	0.006	-	-
HCM Ctrl Dly (s/v)	-	8.7	0	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q (veh)	-	0	-	-

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

Manassas HEF EA
09/16/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	6	6	94	77	14
Future Volume (vph)	16	6	6	94	77	14
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
Frt	0.961					0.850
Flt Protected	0.966			0.997		
Satd. Flow (prot)	1764	0	0	1807	1810	1615
Flt Permitted	0.966			0.997		
Satd. Flow (perm)	1764	0	0	1807	1810	1615
Link Speed (mph)	20			35	35	
Link Distance (ft)	189			332	652	
Travel Time (s)	6.4			6.5	12.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	17%	4%	5%	0%
Adj. Flow (vph)	17	7	7	102	84	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	0	109	84	15
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	19.9%			ICU Level of Service A		
Analysis Period (min)	15					

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



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	16	6	6	94	77	14
Future Volume (Veh/h)	16	6	6	94	77	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	7	7	102	84	15
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	200	84	99			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	200	84	99			
tC, single (s)	6.4	6.2	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	98	99	100			
cM capacity (veh/h)	789	981	1405			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	24	109	84	15		
Volume Left	17	7	0	0		
Volume Right	7	0	0	15		
cSH	837	1405	1700	1700		
Volume to Capacity	0.03	0.00*	0.05	0.00*		
Queue Length 95th (ft)	2	0	0	0		
Control Delay (s/veh)	9.4	0.5	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	9.4	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	1.2					
Intersection Capacity Utilization	19.9%			ICU Level of Service	A	
Analysis Period (min)	15					

* Value less than 0.01.

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	↑	↑
Traffic Vol, veh/h	16	6	6	94	77	14
Future Vol, veh/h	16	6	6	94	77	14
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	17	4	5	0
Mvmt Flow	17	7	7	102	84	15

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	200	84	99	0	0
Stage 1	84	-	-	-	-
Stage 2	116	-	-	-	-
Critical Hdwy	6.4	6.2	4.27	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.353	-	-
Pot Cap-1 Maneuver	793	981	1405	-	-
Stage 1	944	-	-	-	-
Stage 2	914	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	789	981	1405	-	-
Mov Cap-2 Maneuver	789	-	-	-	-
Stage 1	939	-	-	-	-
Stage 2	914	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.4	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1405	-	833	-	-
HCM Lane V/C Ratio	0.005	-	0.029	-	-
HCM Ctrl Dly (s/v)	7.6	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

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

Manassas HEF EA
09/16/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	38	77	89	39	33
Future Volume (vph)	25	38	77	89	39	33
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			0.938	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1570	1509	1770	1845	1615	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1570	1509	1770	1845	1615	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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	15%	7%	2%	3%	3%	19%
Adj. Flow (vph)	27	41	84	97	42	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	41	84	97	78	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	20.9%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manassas HEF EA
09/16/2025












Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	38	77	89	39	33
Future Volume (Veh/h)	25	38	77	89	39	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	41	84	97	42	36
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	325	60	78			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	325	60	78			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	96	96	94			
cM capacity (veh/h)	608	992	1520			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	27	41	84	97	78	
Volume Left	27	0	84	0	0	
Volume Right	0	41	0	0	36	
cSH	608	992	1520	1700	1700	
Volume to Capacity	0.04	0.04	0.06	0.06	0.05	
Queue Length 95th (ft)	3	3	4	0	0	
Control Delay (s/veh)	11.2	8.8	7.5	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	9.7		3.5		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			20.9%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	25	38	77	89	39	33
Future Vol, veh/h	25	38	77	89	39	33
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	92	92	92	92	92	92
Heavy Vehicles, %	15	7	2	3	3	19
Mvmt Flow	27	41	84	97	42	36

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	325	60	78	0	0
Stage 1	60	-	-	-	-
Stage 2	265	-	-	-	-
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	643	992	1520	-	-
Stage 1	930	-	-	-	-
Stage 2	750	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	608	992	1520	-	-
Mov Cap-2 Maneuver	608	-	-	-	-
Stage 1	879	-	-	-	-
Stage 2	750	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.8	3.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1520	-	608	992	-	-
HCM Lane V/C Ratio	0.055	-	0.045	0.042	-	-
HCM Ctrl Dly (s/v)	7.5	-	11.2	8.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.2	-	0.1	0.1	-	-










						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	36	84	36	10	33	36
Future Volume (vph)	36	84	36	10	33	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905		0.970			
Flt Protected	0.985					0.977
Satd. Flow (prot)	1636	0	1843	0	0	1755
Flt Permitted	0.985					0.977
Satd. Flow (perm)	1636	0	1843	0	0	1755
Link Speed (mph)	35		25			25
Link Distance (ft)	2530		410			1111
Travel Time (s)	49.3		11.2			30.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	5%	0%	0%	12%	0%
Adj. Flow (vph)	39	91	39	11	36	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	130	0	50	0	0	75
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	1.04	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	24.2%
Analysis Period (min)	15
	ICU Level of Service A

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

Manassas HEF EA
 09/16/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	36	84	36	10	33	36
Future Volume (Veh/h)	36	84	36	10	33	36
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	91	39	11	36	39
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	156	45			50	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	156	45			50	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	95	91			98	
cM capacity (veh/h)	820	1017			1495	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	130	50	75			
Volume Left	39	0	36			
Volume Right	91	11	0			
cSH	949	1700	1495			
Volume to Capacity	0.14	0.03	0.02			
Queue Length 95th (ft)	12	0	2			
Control Delay (s/veh)	9.4	0.0	3.7			
Lane LOS	A		A			
Approach Delay (s/veh)	9.4	0.0	3.7			
Approach LOS	A					
Intersection Summary						
Average Delay			5.9			
Intersection Capacity Utilization			24.2%		ICU Level of Service	A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	5.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	84	36	10	33	36
Future Vol, veh/h	36	84	36	10	33	36
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	92	92	92	92	92	92
Heavy Vehicles, %	0	5	0	0	12	0
Mvmt Flow	39	91	39	11	36	39

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	156	45	0	0	50
Stage 1	45	-	-	-	-
Stage 2	111	-	-	-	-
Critical Hdwy	6.4	6.25	-	-	4.22
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.345	-	-	2.308
Pot Cap-1 Maneuver	840	1016	-	-	1495
Stage 1	983	-	-	-	-
Stage 2	919	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	819	1016	-	-	1495
Mov Cap-2 Maneuver	819	-	-	-	-
Stage 1	983	-	-	-	-
Stage 2	896	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.4	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	948	1495
HCM Lane V/C Ratio	-	-	0.138	0.024
HCM Ctrl Dly (s/v)	-	-	9.4	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.5	0.1












Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	110	0	0	91
Future Volume (vph)	0	0	110	0	0	91
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	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
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	3%	0%	0%	4%
Adj. Flow (vph)	0	0	120	0	0	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	120	0	0	99
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	9.1%
	ICU Level of Service A
Analysis Period (min)	15

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

Manassas HEF EA
 09/16/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	110	0	0	91
Future Volume (Veh/h)	0	0	110	0	0	91
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	120	0	0	99
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	219	120			120	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	219	120			120	
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)	774	937			1480	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	120	99			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1480			
Volume to Capacity	0.00	0.07	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	9.1%		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	110	0	0	91
Future Vol, veh/h	0	0	110	0	0	91
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	3	0	0	4
Mvmt Flow	0	0	120	0	0	99

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	219	120	0	0	120	0
Stage 1	120	-	-	-	-	-
Stage 2	99	-	-	-	-	-
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	774	937	-	-	1480	-
Stage 1	910	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	774	937	-	-	1480	-
Mov Cap-2 Maneuver	774	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	930	-	-	-	-	-

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)	-	-	-	1480
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	110	0	0	91
Future Volume (vph)	0	0	110	0	0	91
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	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
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	3%	0%	0%	4%
Adj. Flow (vph)	0	0	120	0	0	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	120	0	0	99
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	9.1%
	ICU Level of Service A
Analysis Period (min)	15

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

Manassas HEF EA
 09/16/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	110	0	0	91
Future Volume (Veh/h)	0	0	110	0	0	91
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	120	0	0	99
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	219	120			120	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	219	120			120	
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)	774	937			1480	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	120	99			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1480			
Volume to Capacity	0.00	0.07	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	9.1%		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	110	0	0	91
Future Vol, veh/h	0	0	110	0	0	91
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	3	0	0	4
Mvmt Flow	0	0	120	0	0	99

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	219	120	0	0	120	0
Stage 1	120	-	-	-	-	-
Stage 2	99	-	-	-	-	-
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	774	937	-	-	1480	-
Stage 1	910	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	774	937	-	-	1480	-
Mov Cap-2 Maneuver	774	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	930	-	-	-	-	-

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)	-	-	1480	-
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	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	77	110	0	14	56
Future Volume (vph)	0	77	110	0	14	56
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					0.892	
Fl _t Protected					0.990	
Satd. Flow (prot)	0	1810	1845	0	1678	0
Fl _t Permitted					0.990	
Satd. Flow (perm)	0	1810	1845	0	1678	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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	5%	3%	0%	0%	0%
Adj. Flow (vph)	0	84	120	0	15	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	84	120	0	76	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	16.7%
	ICU Level of Service A
Analysis Period (min)	15

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

Manassas HEF EA
 09/16/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	0	77	110	0	14	56
Future Volume (Veh/h)	0	77	110	0	14	56
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	84	120	0	15	61
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	120				204	120
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	120				204	120
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	93
cM capacity (veh/h)	1480				789	937
Direction, Lane #	SE 1	NW 1	SW 1			
Volume Total	84	120	76			
Volume Left	0	0	15			
Volume Right	0	0	61			
cSH	1480	1700	903			
Volume to Capacity	0.00	0.07	0.08			
Queue Length 95th (ft)	0	0	7			
Control Delay (s/veh)	0.0	0.0	9.4			
Lane LOS			A			
Approach Delay (s/veh)	0.0	0.0	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			16.7%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	2.6					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	0	77	110	0	14	56
Future Vol, veh/h	0	77	110	0	14	56
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	92	92	92	92	92	92
Heavy Vehicles, %	0	5	3	0	0	0
Mvmt Flow	0	84	120	0	15	61




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	120	0	-	0	204 120
Stage 1	-	-	-	-	120 -
Stage 2	-	-	-	-	84 -
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	1480	-	-	-	789 937
Stage 1	-	-	-	-	910 -
Stage 2	-	-	-	-	944 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1480	-	-	-	789 937
Mov Cap-2 Maneuver	-	-	-	-	789 -
Stage 1	-	-	-	-	910 -
Stage 2	-	-	-	-	944 -

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1480	- 903
HCM Lane V/C Ratio	-	-	-	- 0.084
HCM Ctrl Dly (s/v)	-	-	0	- 9.4
HCM Lane LOS	-	-	A	- A
HCM 95th %tile Q (veh)	-	-	0	- 0.3




















Lanes, Volumes, Timings
15: Gateway Blvd

Manassas HEF EA
09/16/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	65	1	14	20	41	3	4	11	46	5	42
Future Volume (vph)	75	65	1	14	20	41	3	4	11	46	5	42
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
Frt		0.998			0.899			0.915				0.850
Flt Protected	0.950			0.950				0.992			0.957	
Satd. Flow (prot)	1805	3339	0	1530	3113	0	0	1603	0	0	1724	1524
Flt Permitted	0.950			0.950				0.992			0.957	
Satd. Flow (perm)	1805	3339	0	1530	3113	0	0	1603	0	0	1724	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	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	0%	18%	13%	0%	0%	0%	12%	6%	0%	6%
Adj. Flow (vph)	82	71	1	15	22	45	3	4	12	50	5	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	72	0	15	67	0	0	19	0	0	55	46
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	27.0%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
 15: Gateway Blvd

Manassas HEF EA
 09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	65	1	14	20	41	3	4	11	46	5	42
Future Volume (Veh/h)	75	65	1	14	20	41	3	4	11	46	5	42
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	71	1	15	22	45	3	4	12	50	5	46
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	67			72			302	333	36	288	311	34
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	67			72			302	333	36	288	311	34
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 %	95			99			99	99	99	92	99	95
cM capacity (veh/h)	1547			1417			571	553	997	591	569	1019
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	82	47	25	15	15	52	19	101				
Volume Left	82	0	0	15	0	0	3	50				
Volume Right	0	0	1	0	0	45	12	46				
cSH	1547	1700	1700	1417	1700	1700	775	1081				
Volume to Capacity	0.05	0.03	0.01	0.01	0.00*	0.03	0.02	0.09				
Queue Length 95th (ft)	4	0	0	1	0	0	2	8				
Control Delay (s/veh)	7.5	0.0	0.0	7.6	0.0	0.0	9.8	10.4				
Lane LOS	A			A			A	B				
Approach Delay (s/veh)	4.0			1.4			9.8	10.4				
Approach LOS							A	B				
Intersection Summary												
Average Delay			5.5									
Intersection Capacity Utilization			27.0%		ICU Level of Service			A				
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↷		↶	↶↷			↷			↶	↶
Traffic Vol, veh/h	75	65	1	14	20	41	3	4	11	46	5	42
Future Vol, veh/h	75	65	1	14	20	41	3	4	11	46	5	42
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	8	0	18	13	0	0	0	12	6	0	6
Mvmt Flow	82	71	1	15	22	45	3	4	12	50	5	46

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	67	0	0	72	0	0	280	333	36	277	311	34
Stage 1	-	-	-	-	-	-	236	236	-	75	75	-
Stage 2	-	-	-	-	-	-	44	97	-	202	236	-
Critical Hdwy	4.1	-	-	4.46	-	-	7.5	6.5	7.14	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	3.42	3.56	4	3.36
Pot Cap-1 Maneuver	1547	-	-	1417	-	-	656	590	997	643	607	1019
Stage 1	-	-	-	-	-	-	752	713	-	914	836	-
Stage 2	-	-	-	-	-	-	970	819	-	769	713	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1547	-	-	1417	-	-	592	553	997	601	569	1019
Mov Cap-2 Maneuver	-	-	-	-	-	-	592	553	-	601	569	-
Stage 1	-	-	-	-	-	-	712	675	-	866	827	-
Stage 2	-	-	-	-	-	-	911	810	-	715	675	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	4		1.4		9.8		10.3	
HCM LOS					A		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	771	1547	-	-	1417	-	-	598	1019
HCM Lane V/C Ratio	0.025	0.053	-	-	0.011	-	-	0.093	0.045
HCM Ctrl Dly (s/v)	9.8	7.5	-	-	7.6	-	-	11.6	8.7
HCM Lane LOS	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0.1	0.2	-	-	0	-	-	0.3	0.1



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	149	211	94	41	
Future Volume (vph)	149	211	94	41	
Ideal Flow (vphpl)	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	
Fr _t		0.850		0.865	
Fl _t Protected					
Satd. Flow (prot)	1810	1583	1845	1325	
Fl _t Permitted					
Satd. Flow (perm)	1810	1583	1845	1325	
Right Turn on Red		Yes		No	
Satd. Flow (RTOR)		229			
Link Speed (mph)			25		
Link Distance (ft)			137		
Travel Time (s)			3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	5%	2%	3%	24%	
Adj. Flow (vph)	162	229	102	45	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	162	229	102	45	
Enter Blocked Intersection	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	
Median Width(ft)			12		
Link Offset(ft)			-16		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	
Turning Speed (mph)	25	9		9	
Turn Type	Prot	Free	NA	Prot	
Protected Phases	2		4	6	8
Permitted Phases		Free			
Minimum Split (s)	23.0		23.0	10.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50%
Maximum Green (s)	25.0		25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Walk Time (s)			7.0		7.0
Flash Don't Walk (s)			11.0		11.0
Pedestrian Calls (#/hr)			0		0
Act Effct Green (s)	25.0	60.0	25.0	25.0	
Actuated g/C Ratio	0.42	1.00	0.42	0.42	
v/c Ratio	0.21	0.14	0.13	0.08	
Control Delay (s/veh)	12.2	0.2	10.1	11.2	
Queue Delay	0.0	0.0	0.0	0.0	

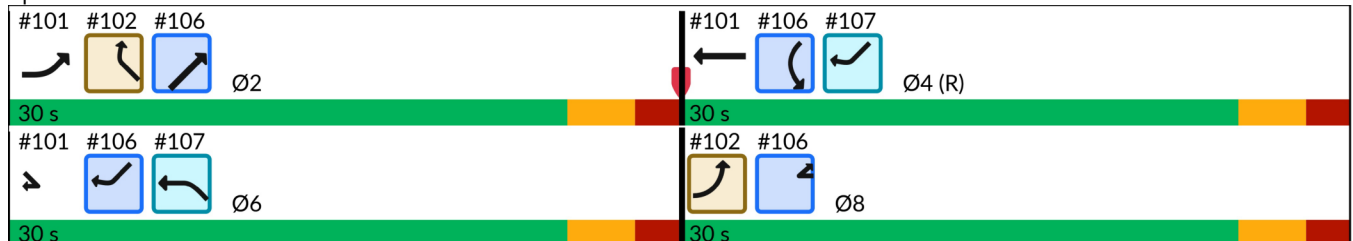


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	12.2	0.2	10.1	11.2	
LOS	B	A	B	B	
Approach Delay (s/veh)			10.1		
Approach LOS			B		
Queue Length 50th (ft)	36	0	22	9	
Queue Length 95th (ft)	70	0	45	26	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	754	1583	768	552	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.21	0.14	0.13	0.08	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.32
Intersection Signal Delay (s/veh):	6.6
Intersection LOS:	A
Intersection Capacity Utilization:	18.3%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 101: WB Clover Hill to SB PWP/SB PWP to EB Clover Hill & Clover Hill Rd





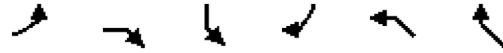
Movement	EBL	EBR	WBT	SER
Lane Configurations				
Traffic Volume (vph)	149	211	94	41
Future Volume (vph)	149	211	94	41
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.87
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1810	1583	1845	1325
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1810	1583	1845	1325
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	229	102	45
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	162	229	102	45
Heavy Vehicles (%)	5%	2%	3%	24%
Turn Type	Prot	Free	NA	Prot
Protected Phases	2		4	6
Permitted Phases		Free		
Actuated Green, G (s)	25.0	60.0	25.0	25.0
Effective Green, g (s)	25.0	60.0	25.0	25.0
Actuated g/C Ratio	0.42	1.00	0.42	0.42
Clearance Time (s)	5.0		5.0	5.0
Lane Grp Cap (vph)	754	1583	768	552
v/s Ratio Prot	c0.09		0.06	0.03
v/s Ratio Perm		c0.14		
v/c Ratio	0.21	0.14	0.13	0.08
Uniform Delay, d1	11.2	0.0	10.8	10.6
Progression Factor	1.00	1.00	0.88	1.00
Incremental Delay, d2	0.7	0.2	0.4	0.3
Delay (s)	11.9	0.2	9.9	10.9
Level of Service	B	A	A	B
Approach Delay (s/veh)			9.9	
Approach LOS			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	197	0	0	0	0	149		
Future Volume (vph)	197	0	0	0	0	149		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected	0.950							
Satd. Flow (prot)	1787	0	0	0	0	1810		
Flt Permitted	0.950							
Satd. Flow (perm)	1787	0	0	0	0	1810		
Right Turn on Red	No	No		No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	246		392		85			
Travel Time (s)	6.7		10.7		2.3			
Peak Hour Factor	0.95	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	1%	0%	0%	0%	0%	5%		
Adj. Flow (vph)	207	0	0	0	0	162		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	207	0	0	0	0	162		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	L NA	Right	Left	Right	Left	Right		
Median Width(ft)	12		0		0			
Link Offset(ft)	0		0		12			
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	15	25		
Turn Type	Prot					Prot		
Protected Phases	8					2	4	6
Permitted Phases								
Minimum Split (s)	23.0					23.0	23.0	10.0
Total Split (s)	30.0					30.0	30.0	30.0
Total Split (%)	50.0%					50.0%	50%	50%
Maximum Green (s)	25.0					25.0	25.0	25.0
Yellow Time (s)	3.0					3.0	3.0	3.0
All-Red Time (s)	2.0					2.0	2.0	2.0
Lost Time Adjust (s)	0.0					0.0		
Total Lost Time (s)	5.0					5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)	7.0						7.0	
Flash Don't Walk (s)	11.0						11.0	
Pedestrian Calls (#/hr)	0						0	
Act Effct Green (s)	25.0					25.0		
Actuated g/C Ratio	0.42					0.42		
v/c Ratio	0.28					0.21		
Control Delay (s/veh)	12.9					2.0		
Queue Delay	0.0					0.0		

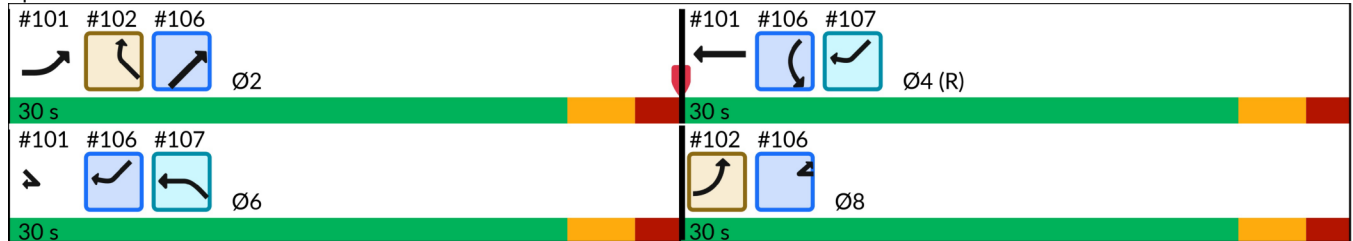


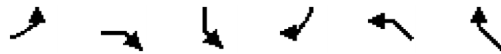
Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	12.9							2.0
LOS	B							A
Approach Delay (s/veh)	12.9				2.0			
Approach LOS	B				A			
Queue Length 50th (ft)	47							3
Queue Length 95th (ft)	88							5
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	744							754
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.28							0.21

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.32
Intersection Signal Delay (s/veh):	8.1
Intersection LOS:	A
Intersection Capacity Utilization:	16.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 102: SB PWP to WB Clover Hill & Clover Hill Rd





Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations	↖					↗
Traffic Volume (vph)	197	0	0	0	0	149
Future Volume (vph)	197	0	0	0	0	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0					5.0
Lane Util. Factor	1.00					1.00
Frt	1.00					1.00
Flt Protected	0.95					1.00
Satd. Flow (prot)	1787					1810
Flt Permitted	0.95					1.00
Satd. Flow (perm)	1787					1810
Peak-hour factor, PHF	0.95	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	0	0	0	0	162
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	207	0	0	0	0	162
Heavy Vehicles (%)	1%	0%	0%	0%	0%	5%
Turn Type	Prot					Prot
Protected Phases	8					2
Permitted Phases						
Actuated Green, G (s)	25.0					25.0
Effective Green, g (s)	25.0					25.0
Actuated g/C Ratio	0.42					0.42
Clearance Time (s)	5.0					5.0
Lane Grp Cap (vph)	744					754
v/s Ratio Prot	c0.12					c0.09
v/s Ratio Perm						
v/c Ratio	0.28					0.21
Uniform Delay, d1	11.5					11.2
Progression Factor	1.00					0.12
Incremental Delay, d2	0.9					0.6
Delay (s)	12.5					1.9
Level of Service	B					A
Approach Delay (s/veh)	12.5		0.0		1.9	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	62	0	0	211
Future Volume (vph)	0	0	62	0	0	211
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						0.865
Fl _t Protected			0.950			
Satd. Flow (prot)	0	0	1752	0	0	1611
Fl _t Permitted			0.950			
Satd. Flow (perm)	0	0	1752	0	0	1611
Link Speed (mph)	30		30		30	
Link Distance (ft)	720		202		211	
Travel Time (s)	16.4		4.6		4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	3%	0%	0%	2%
Adj. Flow (vph)	0	0	67	0	0	229
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	67	0	0	229
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)	0		12		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	15	9
Sign Control	Free		Yield		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.6%
	ICU Level of Service A
Analysis Period (min)	15



Movement	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	0	0	62	0	0	211
Future Volume (Veh/h)	0	0	62	0	0	211
Sign Control	Free		Yield		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	67	0	0	229
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	211					
pX, platoon unblocked						
vC, conflicting volume			229	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			229	0	0	
tC, single (s)			6.4	6.2	4.1	
tC, 2 stage (s)						
tF (s)			3.5	3.3	2.2	
p0 queue free %			91	100	100	
cM capacity (veh/h)			757	1091	1636	
Direction, Lane #	SE 1	NE 1				
Volume Total	67	229				
Volume Left	67	0				
Volume Right	0	0				
cSH	757	1700				
Volume to Capacity	0.09	0.13				
Queue Length 95th (ft)	7	0				
Control Delay (s/veh)	10.2	0.0				
Lane LOS	B					
Approach Delay (s/veh)	10.2	0.0				
Approach LOS	B					
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			25.6%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
 106: NB PWP to EB Clover Hill & Clover Hill Rd



Lane Group	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	63	231	79	146
Future Volume (vph)	63	231	79	146
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00
Fr _t	0.865			0.850
Flt Protected				
Satd. Flow (prot)	1336	1881	1827	1568
Flt Permitted				
Satd. Flow (perm)	1336	1881	1827	1568
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				159
Link Speed (mph)		25		
Link Distance (ft)		134		
Travel Time (s)		3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	23%	1%	4%	3%
Adj. Flow (vph)	68	251	86	159
Shared Lane Traffic (%)				
Lane Group Flow (vph)	68	251	86	159
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Right	Left	Left	Right
Median Width(ft)		12		
Link Offset(ft)		-6		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	9
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Minimum Split (s)	23.0	23.0	23.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Walk Time (s)	7.0		7.0	
Flash Don't Walk (s)	11.0		11.0	
Pedestrian Calls (#/hr)	0		0	
Act Effct Green (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
v/c Ratio	0.12	0.32	0.11	0.21
Control Delay (s/veh)	11.6	11.8	11.3	3.1
Queue Delay	0.0	0.0	0.0	0.0

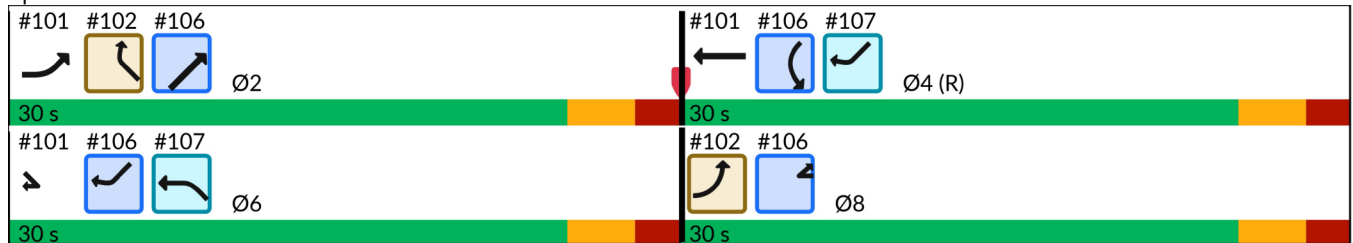


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.6	11.8	11.3	3.1
LOS	B	B	B	A
Approach Delay (s/veh)	11.8			
Approach LOS	B			
Queue Length 50th (ft)	14	60	18	0
Queue Length 95th (ft)	36	103	41	28
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	556	783	761	746
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.32	0.11	0.21

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.32
Intersection Signal Delay (s/veh):	9.2
Intersection LOS:	A
Intersection Capacity Utilization:	24.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 106: NB PWP to EB Clover Hill & Clover Hill Rd





Movement	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	63	231	79	146
Future Volume (vph)	63	231	79	146
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	0.87	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1336	1881	1827	1568
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1336	1881	1827	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	251	86	159
RTOR Reduction (vph)	0	0	0	93
Lane Group Flow (vph)	68	251	86	66
Heavy Vehicles (%)	23%	1%	4%	3%
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Actuated Green, G (s)	25.0	25.0	25.0	25.0
Effective Green, g (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	556	783	761	653
v/s Ratio Prot	c0.05	c0.13	0.05	0.04
v/s Ratio Perm				
v/c Ratio	0.12	0.32	0.11	0.10
Uniform Delay, d1	10.8	11.8	10.7	10.7
Progression Factor	1.00	0.88	1.00	1.00
Incremental Delay, d2	0.5	1.1	0.3	0.3
Delay (s)	11.2	11.4	11.0	11.0
Level of Service	B	B	B	B
Approach Delay (s/veh)		11.4		
Approach LOS		B		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	0	0	77	0	0	79		
Future Volume (vph)	0	0	77	0	0	79		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected			0.950					
Satd. Flow (prot)	0	0	1770	0	0	1827		
Flt Permitted			0.950					
Satd. Flow (perm)	0	0	1770	0	0	1827		
Right Turn on Red		No	No	No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	390		186		73			
Travel Time (s)	10.6		5.1		2.0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	0%	0%	2%	0%	0%	4%		
Adj. Flow (vph)	0	0	84	0	0	86		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	84	0	0	86		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Right		
Median Width(ft)	0		12		0			
Link Offset(ft)	0		0		12			
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	15	9		
Turn Type			Prot			Prot		
Protected Phases			6			4	2	8
Permitted Phases								
Minimum Split (s)			10.0			23.0	23.0	23.0
Total Split (s)			30.0			30.0	30.0	30.0
Total Split (%)			50.0%			50.0%	50%	50%
Maximum Green (s)			25.0			25.0	25.0	25.0
Yellow Time (s)			3.0			3.0	3.0	3.0
All-Red Time (s)			2.0			2.0	2.0	2.0
Lost Time Adjust (s)			0.0			0.0		
Total Lost Time (s)			5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)						7.0		7.0
Flash Don't Walk (s)						11.0		11.0
Pedestrian Calls (#/hr)						0		0
Act Effct Green (s)			25.0			25.0		
Actuated g/C Ratio			0.42			0.42		
v/c Ratio			0.11			0.11		
Control Delay (s/veh)			11.3			1.5		
Queue Delay			0.0			0.0		

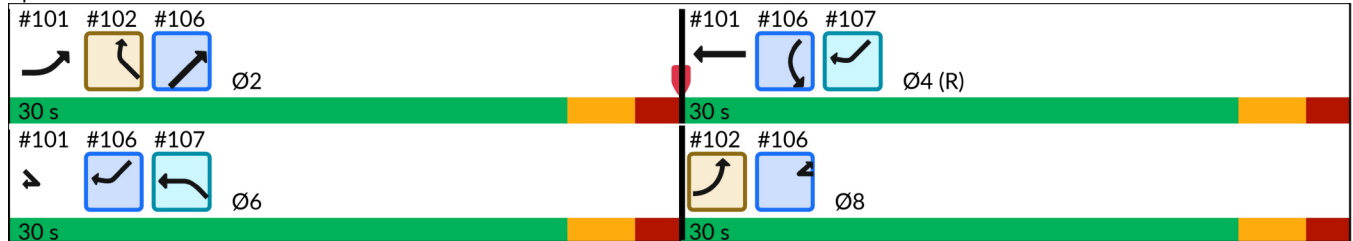


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			11.3			1.5		
LOS			B			A		
Approach Delay (s/veh)			11.3		1.5			
Approach LOS			B		A			
Queue Length 50th (ft)			18			1		
Queue Length 95th (ft)			41			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			737			761		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.11			0.11		

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.32
Intersection Signal Delay (s/veh):	6.3
Intersection LOS:	A
Intersection Capacity Utilization:	20.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 107: NB PWP to WB Clover Hill



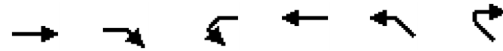
HCM Signalized Intersection Capacity Analysis
 107: NB PWP to WB Clover Hill

Manassas HEF EA
 09/16/2025



Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	77	0	0	79
Future Volume (vph)	0	0	77	0	0	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			1770			1827
Flt Permitted			0.95			1.00
Satd. Flow (perm)			1770			1827
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	84	0	0	86
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	84	0	0	86
Heavy Vehicles (%)	0%	0%	2%	0%	0%	4%
Turn Type			Prot			Prot
Protected Phases			6			4
Permitted Phases						
Actuated Green, G (s)			25.0			25.0
Effective Green, g (s)			25.0			25.0
Actuated g/C Ratio			0.42			0.42
Clearance Time (s)			5.0			5.0
Lane Grp Cap (vph)			737			761
v/s Ratio Prot			c0.05			c0.05
v/s Ratio Perm						
v/c Ratio			0.11			0.11
Uniform Delay, d1			10.7			10.7
Progression Factor			1.00			0.11
Incremental Delay, d2			0.3			0.3
Delay (s)			11.0			1.4
Level of Service			B			A
Approach Delay (s/veh)	0.0		11.0		1.4	
Approach LOS	A		B		A	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			6.2		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.11			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			20.0%		ICU Level of Service	A
Analysis Period (min)			15			

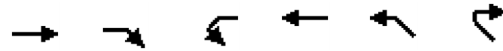
c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (vph)	0	0	0	146	115	0
Future Volume (vph)	0	0	0	146	115	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)	0	0	0	1845	1687	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1845	1687	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	548			316	253	
Travel Time (s)	12.5			7.2	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	7%	0%
Adj. Flow (vph)	0	0	0	159	125	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	159	125	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	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)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.9%
	ICU Level of Service A
Analysis Period (min)	15



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (veh/h)	0	0	0	146	115	0
Future Volume (Veh/h)	0	0	0	146	115	0
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	159	125	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)	316					
pX, platoon unblocked						
vC, conflicting volume			0	159	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	159	0	
tC, single (s)			4.1	6.5	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.6	3.3	
p0 queue free %			100	85	100	
cM capacity (veh/h)			1636	821	1091	
Direction, Lane #	WB 1	NW 1				
Volume Total	159	125				
Volume Left	0	125				
Volume Right	0	0				
cSH	1700	821				
Volume to Capacity	0.09	0.15				
Queue Length 95th (ft)	0	13				
Control Delay (s/veh)	0.0	10.2				
Lane LOS			B			
Approach Delay (s/veh)	0.0	10.2				
Approach LOS			B			
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			31.9%	ICU Level of Service	A	
Analysis Period (min)			15			

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

Manassas HEF EA
 09/16/2025



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (vph)	48	1	1	1	3	55
Future Volume (vph)	48	1	1	1	3	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
Fr _t				0.850		0.850
Fl _t Protected		0.953			0.950	
Satd. Flow (prot)	0	1811	1900	1615	1805	1615
Fl _t Permitted		0.953			0.950	
Satd. Flow (perm)	0	1811	1900	1615	1805	1615
Link Speed (mph)		35	35		25	
Link Distance (ft)		4575	551		921	
Travel Time (s)		89.1	10.7		25.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	52	1	1	1	3	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	53	1	1	3	60
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	19.4%
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
 09/16/2025



















Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↔	↕	↕	↕	↕
Traffic Volume (veh/h)	48	1	1	1	3	55
Future Volume (Veh/h)	48	1	1	1	3	55
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	1	1	1	3	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	921					
pX, platoon unblocked						
vC, conflicting volume	7	6	6	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	7	6	6	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)	1015	892	892	1091	1636	
Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2	
Volume Total	53	1	1	3	60	
Volume Left	52	0	0	3	0	
Volume Right	0	0	1	0	60	
cSH	1013	892	1091	1636	1700	
Volume to Capacity	0.05	0.00*	0.00*	0.00*	0.04	
Queue Length 95th (ft)	4	0	0	0	0	
Control Delay (s/veh)	8.8	9.0	8.3	7.2	0.0	
Lane LOS	A	A	A	A		
Approach Delay (s/veh)	8.8	8.7		0.3		
Approach LOS	A	A				
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			19.4%	ICU Level of Service	A	
Analysis Period (min)			15			

* Value less than 0.01.

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

Manassas HEF EA
 09/16/2025

















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	3	1	13	4	36	1	6	10	27	5	1
Future Volume (vph)	5	3	1	13	4	36	1	6	10	27	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
Frt		0.985			0.908			0.922			0.996	
Flt Protected		0.973			0.988			0.997			0.960	
Satd. Flow (prot)	0	1821	0	0	1704	0	0	1747	0	0	1817	0
Flt Permitted		0.973			0.988			0.997			0.960	
Satd. Flow (perm)	0	1821	0	0	1704	0	0	1747	0	0	1817	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	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	5	3	1	14	4	39	1	7	11	29	5	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	57	0	0	19	0	0	35	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	18.5%
ICU Level of Service	A
Analysis Period (min)	15

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

Manassas HEF EA
 09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	1	13	4	36	1	6	10	27	5	1
Future Volume (Veh/h)	5	3	1	13	4	36	1	6	10	27	5	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	3	1	14	4	39	1	7	11	29	5	1
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	80	84	6	81	79	13	6			18		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	80	84	6	81	79	13	6			18		
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	98	100	96	100			98		
cM capacity (veh/h)	864	795	1083	896	800	1074	1628			1612		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	9	57	19	35								
Volume Left	5	14	1	29								
Volume Right	1	39	11	1								
cSH	859	1001	1628	1612								
Volume to Capacity	0.01	0.06	0.00*	0.02								
Queue Length 95th (ft)	1	5	0	1								
Control Delay (s/veh)	9.2	8.8	0.4	6.0								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	9.2	8.8	0.4	6.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			6.7									
Intersection Capacity Utilization			18.5%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	3	1	13	4	36	1	6	10	27	5	1
Future Vol, veh/h	5	3	1	13	4	36	1	6	10	27	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	3	1	14	4	39	1	7	11	29	5	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	81	84	6	81	79	13	6	0	0	18	0	0
Stage 1	64	64	-	15	15	-	-	-	-	-	-	-
Stage 2	17	20	-	66	64	-	-	-	-	-	-	-
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	912	810	1083	912	815	1073	1628	-	-	1612	-	-
Stage 1	952	846	-	1010	887	-	-	-	-	-	-	-
Stage 2	1008	883	-	950	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	863	795	1083	895	800	1073	1628	-	-	1612	-	-
Mov Cap-2 Maneuver	863	795	-	895	800	-	-	-	-	-	-	-
Stage 1	951	831	-	1009	886	-	-	-	-	-	-	-
Stage 2	966	882	-	928	831	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	9.2		7.4		0.4		6	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1628	-	-	858	1580	1612	-	-
HCM Lane V/C Ratio	0.001	-	-	0.011	0.036	0.018	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	9.2	7.4	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.1	0.1	-	-

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

Manassas HEF EA
09/16/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	1	0	11	19	0
Future Volume (vph)	6	1	0	11	19	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)	207			735	313	
Travel Time (s)	7.1			14.3	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	7	1	0	12	21	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	1	0	12	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
 09/16/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷		↶	↶	
Traffic Volume (veh/h)	6	1	0	11	19	0
Future Volume (Veh/h)	6	1	0	11	19	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	1	0	12	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	33	21	21			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	33	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)	986	1062	1608			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	7	1	12	21		
Volume Left	7	0	0	0		
Volume Right	0	1	0	0		
cSH	986	1062	1700	1700		
Volume to Capacity	0.00*	0.00*	0.00*	0.01		
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)	8.6		0.0	0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

* Value less than 0.01.

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	6	1	0	11	19	0
Future Vol, veh/h	6	1	0	11	19	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	7	1	0	12	21	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	33	21	-	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	12	-	-	-	-	-
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	986	1062	0	-	-	0
Stage 1	1007	-	0	-	-	0
Stage 2	1016	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	986	1062	-	-	-	-
Mov Cap-2 Maneuver	986	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	1016	-	-	-	-	-

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)	-	986	1062	-
HCM Lane V/C Ratio	-	0.007	0.001	-
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: Wakeman Dr & Frontage Rd Entrance

Manassas HEF EA
09/16/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	1	9	38	32	15
Future Volume (vph)	9	1	9	38	32	15
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
Frt	0.988					0.850
Flt Protected	0.957			0.990		
Satd. Flow (prot)	1796	0	0	1881	1900	1615
Flt Permitted	0.957			0.990		
Satd. Flow (perm)	1796	0	0	1881	1900	1615
Link Speed (mph)	20			35	35	
Link Distance (ft)	189			332	652	
Travel Time (s)	6.4			6.5	12.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	10	1	10	41	35	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	51	35	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	19.2%			ICU Level of Service A		
Analysis Period (min)	15					

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



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	1	9	38	32	15
Future Volume (Veh/h)	9	1	9	38	32	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	1	10	41	35	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	96	35	51			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	96	35	51			
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)	902	1044	1568			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	11	51	35	16		
Volume Left	10	10	0	0		
Volume Right	1	0	0	16		
cSH	914	1568	1700	1700		
Volume to Capacity	0.01	0.00*	0.02	0.00*		
Queue Length 95th (ft)	1	0	0	0		
Control Delay (s/veh)	9.0	1.5	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	9.0	1.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	1.5					
Intersection Capacity Utilization	19.2%			ICU Level of Service	A	
Analysis Period (min)	15					

* Value less than 0.01.

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	↑	↑
Traffic Vol, veh/h	9	1	9	38	32	15
Future Vol, veh/h	9	1	9	38	32	15
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	1	10	41	35	16

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	96	35	51	0	0
Stage 1	35	-	-	-	-
Stage 2	61	-	-	-	-
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	908	1044	1568	-	-
Stage 1	993	-	-	-	-
Stage 2	967	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	902	1044	1568	-	-
Mov Cap-2 Maneuver	902	-	-	-	-
Stage 1	986	-	-	-	-
Stage 2	967	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9	1.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1568	-	914	-	-
HCM Lane V/C Ratio	0.006	-	0.012	-	-
HCM Ctrl Dly (s/v)	7.3	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

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

Manassas HEF EA
09/16/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	19	28	23	27	9
Future Volume (vph)	10	19	28	23	27	9
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			0.965	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1597	1615	1805	1900	1834	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1597	1615	1805	1900	1834	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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	13%	0%	0%	0%	0%	0%
Adj. Flow (vph)	11	21	30	25	29	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	21	30	25	39	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	18.2%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manassas HEF EA
09/16/2025












Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	19	28	23	27	9
Future Volume (Veh/h)	10	19	28	23	27	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	21	30	25	29	10
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	119	34	39			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119	34	39			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	99	98	98			
cM capacity (veh/h)	835	1045	1584			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	11	21	30	25	39	
Volume Left	11	0	30	0	0	
Volume Right	0	21	0	0	10	
cSH	835	1045	1584	1700	1700	
Volume to Capacity	0.01	0.02	0.02	0.01	0.02	
Queue Length 95th (ft)	1	2	1	0	0	
Control Delay (s/veh)	9.4	8.5	7.3	0.0	0.0	
Lane LOS	A	A	A			
Approach Delay (s/veh)	8.8		4.0		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			18.2%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↶	↷	↷
Traffic Vol, veh/h	10	19	28	23	27	9
Future Vol, veh/h	10	19	28	23	27	9
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	92	92	92	92	92	92
Heavy Vehicles, %	13	0	0	0	0	0
Mvmt Flow	11	21	30	25	29	10

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	119	34	39	0	0
Stage 1	34	-	-	-	-
Stage 2	85	-	-	-	-
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	851	1045	1584	-	-
Stage 1	961	-	-	-	-
Stage 2	911	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	835	1045	1584	-	-
Mov Cap-2 Maneuver	835	-	-	-	-
Stage 1	943	-	-	-	-
Stage 2	911	-	-	-	-










Approach	EB	NB	SB
HCM Ctrl Dly, s/v	8.8	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1584	-	835	1045	-	-
HCM Lane V/C Ratio	0.019	-	0.013	0.02	-	-
HCM Ctrl Dly (s/v)	7.3	-	9.4	8.5	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q (veh)	0.1	-	0	0.1	-	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	33	5	5	23	5
Future Volume (vph)	3	33	5	5	23	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875		0.932			
Flt Protected	0.996					0.960
Satd. Flow (prot)	1656	0	1771	0	0	1737
Flt Permitted	0.996					0.960
Satd. Flow (perm)	1656	0	1771	0	0	1737
Link Speed (mph)	35		25			25
Link Distance (ft)	2530		410			1111
Travel Time (s)	49.3		11.2			30.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	6%	0%
Adj. Flow (vph)	3	36	5	5	25	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	10	0	0	30
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	1.04	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	18.2%		ICU Level of Service A			
Analysis Period (min)	15					

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

Manassas HEF EA
 09/16/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	33	5	5	23	5
Future Volume (Veh/h)	3	33	5	5	23	5
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	36	5	5	25	5
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	8			10	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	63	8			10	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	100	97			98	
cM capacity (veh/h)	934	1081			1584	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	39	10	30			
Volume Left	3	0	25			
Volume Right	36	5	0			
cSH	1068	1700	1584			
Volume to Capacity	0.04	0.00*	0.02			
Queue Length 95th (ft)	3	0	1			
Control Delay (s/veh)	8.5	0.0	6.1			
Lane LOS	A		A			
Approach Delay (s/veh)	8.5	0.0	6.1			
Approach LOS	A					
Intersection Summary						
Average Delay			6.5			
Intersection Capacity Utilization		18.2%		ICU Level of Service		A
Analysis Period (min)			15			










* Value less than 0.01.

Intersection						
Int Delay, s/veh	6.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	33	5	5	23	5
Future Vol, veh/h	3	33	5	5	23	5
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	6	0
Mvmt Flow	3	36	5	5	25	5

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	63	8	0	0	10	0
Stage 1	8	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	948	1080	-	-	1584	-
Stage 1	1020	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	933	1080	-	-	1584	-
Mov Cap-2 Maneuver	933	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	957	-	-	-	-	-










Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.5	0	6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1066	1584
HCM Lane V/C Ratio	-	-	0.037	0.016
HCM Ctrl Dly (s/v)	-	-	8.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.1	0

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	47	0	0	47
Future Volume (vph)	0	0	47	0	0	47
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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	51	0	0	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	51	0	0	51
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
 09/16/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	47	0	0	47
Future Volume (Veh/h)	0	0	47	0	0	47
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	51	0	0	51
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	102	51			51	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	102	51			51	
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)	901	1023			1568	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	51	51			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1568			
Volume to Capacity	0.00	0.03	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						
Traffic Vol, veh/h	0	0	47	0	0	47
Future Vol, veh/h	0	0	47	0	0	47
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	51	0	0	51

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	102	51	0	0	51	0
Stage 1	51	-	-	-	-	-
Stage 2	51	-	-	-	-	-
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	901	1023	-	-	1568	-
Stage 1	977	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	901	1023	-	-	1568	-
Mov Cap-2 Maneuver	901	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	977	-	-	-	-	-

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)	-	-	-	1568
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	47	0	0	47
Future Volume (vph)	0	0	47	0	0	47
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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	51	0	0	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	51	0	0	51
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
 09/16/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	47	0	0	47
Future Volume (Veh/h)	0	0	47	0	0	47
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	51	0	0	51
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	102	51			51	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	102	51			51	
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)	901	1023			1568	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	51	51			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1568			
Volume to Capacity	0.00	0.03	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						
Traffic Vol, veh/h	0	0	47	0	0	47
Future Vol, veh/h	0	0	47	0	0	47
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	51	0	0	51

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	102	51	0	0	51	0
Stage 1	51	-	-	-	-	-
Stage 2	51	-	-	-	-	-
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	901	1023	-	-	1568	-
Stage 1	977	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	901	1023	-	-	1568	-
Mov Cap-2 Maneuver	901	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	977	-	-	-	-	-

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)	-	-	-	1568
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	46	47	0	1	4
Future Volume (vph)	0	46	47	0	1	4
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					0.892	
Fl _t Protected					0.990	
Satd. Flow (prot)	0	1900	1900	0	1678	0
Fl _t Permitted					0.990	
Satd. Flow (perm)	0	1900	1900	0	1678	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	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	50	51	0	1	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	50	51	0	5	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
 09/16/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↔		↕	↔
Traffic Volume (veh/h)	0	46	47	0	1	4
Future Volume (Veh/h)	0	46	47	0	1	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	50	51	0	1	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	51				101	51
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	51				101	51
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)	1568				902	1023

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	50	51	5
Volume Left	0	0	1
Volume Right	0	0	4
cSH	1568	1700	996
Volume to Capacity	0.00	0.03	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	46	47	0	1	4
Future Vol, veh/h	0	46	47	0	1	4
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	50	51	0	1	4




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	51	0	-	0	101 51
Stage 1	-	-	-	-	51 -
Stage 2	-	-	-	-	50 -
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	1568	-	-	-	902 1023
Stage 1	-	-	-	-	977 -
Stage 2	-	-	-	-	978 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1568	-	-	-	902 1023
Mov Cap-2 Maneuver	-	-	-	-	902 -
Stage 1	-	-	-	-	977 -
Stage 2	-	-	-	-	978 -

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)	-	-	1568	- 996
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

Manassas HEF EA
09/16/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	19	0	5	16	25	0	3	0	39	0	22
Future Volume (vph)	22	19	0	5	16	25	0	3	0	39	0	22
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
Frt					0.908							0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1805	3610	0	1805	3180	0	0	1900	0	0	1805	1615
Flt Permitted	0.950			0.950							0.950	
Satd. Flow (perm)	1805	3610	0	1805	3180	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	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	24	21	0	5	17	27	0	3	0	42	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	21	0	5	44	0	0	3	0	0	42	24
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	23.4%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
15: Gateway Blvd

Manassas HEF EA
09/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	19	0	5	16	25	0	3	0	39	0	22
Future Volume (Veh/h)	22	19	0	5	16	25	0	3	0	39	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	21	0	5	17	27	0	3	0	42	0	24
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	44			21			100	123	11	101	110	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	44			21			100	123	11	101	110	22
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			100			100	100	100	95	100	98
cM capacity (veh/h)	1577			1608			845	757	1074	861	770	1056
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	24	14	7	5	11	33	3	66				
Volume Left	24	0	0	5	0	0	0	42				
Volume Right	0	0	0	0	0	27	0	24				
cSH	1577	1700	1700	1608	1700	1700	757	1353				
Volume to Capacity	0.02	0.00*	0.00*	0.00*	0.00*	0.02	0.00*	0.05				
Queue Length 95th (ft)	1	0	0	0	0	0	0	4				
Control Delay (s/veh)	7.3	0.0	0.0	7.2	0.0	0.0	9.8	9.1				
Lane LOS	A			A			A	A				
Approach Delay (s/veh)	3.9			0.7			9.8	9.1				
Approach LOS							A	A				
Intersection Summary												
Average Delay			5.2									
Intersection Capacity Utilization			23.4%		ICU Level of Service			A				
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕↗		↙	↕↗			↕↗			↕	↗
Traffic Vol, veh/h	22	19	0	5	16	25	0	3	0	39	0	22
Future Vol, veh/h	22	19	0	5	16	25	0	3	0	39	0	22
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	8	0	0	0	0	0	0	0
Mvmt Flow	24	21	0	5	17	27	0	3	0	42	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	44	0	0	21	0	0	88	123	11	101	110	22
Stage 1	-	-	-	-	-	-	69	69	-	41	41	-
Stage 2	-	-	-	-	-	-	19	54	-	60	69	-
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	1577	-	-	1608	-	-	893	771	1074	875	784	1056
Stage 1	-	-	-	-	-	-	939	841	-	974	865	-
Stage 2	-	-	-	-	-	-	1003	854	-	950	841	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1577	-	-	1608	-	-	861	757	1074	860	770	1056
Mov Cap-2 Maneuver	-	-	-	-	-	-	861	757	-	860	770	-
Stage 1	-	-	-	-	-	-	925	828	-	959	862	-
Stage 2	-	-	-	-	-	-	977	851	-	932	828	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	3.9			0.8			9.8			9.1		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	757	1577	-	-	1608	-	-	860	1056
HCM Lane V/C Ratio	0.004	0.015	-	-	0.003	-	-	0.049	0.023
HCM Ctrl Dly (s/v)	9.8	7.3	-	-	7.2	-	-	9.4	8.5
HCM Lane LOS	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.2	0.1



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	22	28	31	27	
Future Volume (vph)	22	28	31	27	
Ideal Flow (vphpl)	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	
Fr _t		0.850		0.865	
Fl _t Protected					
Satd. Flow (prot)	1900	1615	1900	1644	
Fl _t Permitted					
Satd. Flow (perm)	1900	1615	1900	1644	
Right Turn on Red		Yes		No	
Satd. Flow (RTOR)		127			
Link Speed (mph)			25		
Link Distance (ft)			137		
Travel Time (s)			3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	
Adj. Flow (vph)	24	30	34	29	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	24	30	34	29	
Enter Blocked Intersection	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	
Median Width(ft)			12		
Link Offset(ft)			-16		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	
Turning Speed (mph)	25	9		9	
Turn Type	Prot	Free	NA	Prot	
Protected Phases	2		4	6	8
Permitted Phases		Free			
Minimum Split (s)	23.0		23.0	10.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50%
Maximum Green (s)	25.0		25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Walk Time (s)			7.0		7.0
Flash Don't Walk (s)			11.0		11.0
Pedestrian Calls (#/hr)			0		0
Act Effct Green (s)	25.0	60.0	25.0	25.0	
Actuated g/C Ratio	0.42	1.00	0.42	0.42	
v/c Ratio	0.03	0.02	0.04	0.04	
Control Delay (s/veh)	10.5	0.0	8.3	10.7	
Queue Delay	0.0	0.0	0.0	0.0	

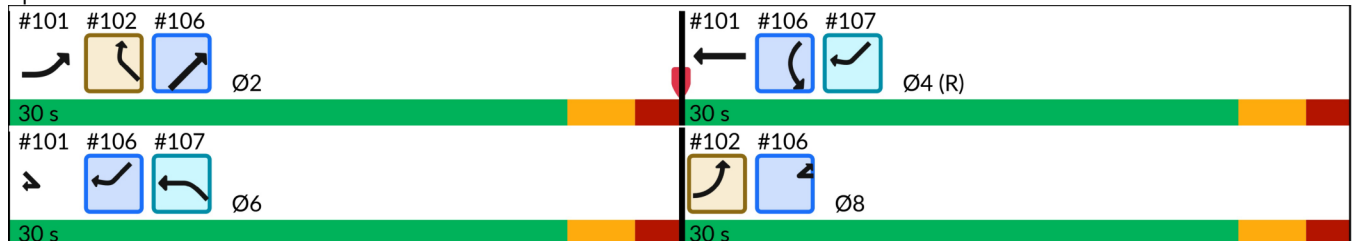


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	10.5	0.0	8.3	10.7	
LOS	B	A	A	B	
Approach Delay (s/veh)			8.3		
Approach LOS			A		
Queue Length 50th (ft)	5	0	5	6	
Queue Length 95th (ft)	16	0	16	19	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	791	1615	791	685	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.02	0.04	0.04	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.27
Intersection Signal Delay (s/veh):	7.2
Intersection LOS:	A
Intersection Capacity Utilization:	16.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 101: WB Clover Hill to SB PWP/SB PWP to EB Clover Hill & Clover Hill Rd





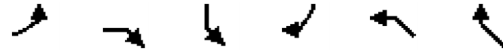
Movement	EBL	EBR	WBT	SER
Lane Configurations				
Traffic Volume (vph)	22	28	31	27
Future Volume (vph)	22	28	31	27
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.87
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1900	1615	1900	1644
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1900	1615	1900	1644
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	30	34	29
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	24	30	34	29
Heavy Vehicles (%)	0%	0%	0%	0%
Turn Type	Prot	Free	NA	Prot
Protected Phases	2		4	6
Permitted Phases		Free		
Actuated Green, G (s)	25.0	60.0	25.0	25.0
Effective Green, g (s)	25.0	60.0	25.0	25.0
Actuated g/C Ratio	0.42	1.00	0.42	0.42
Clearance Time (s)	5.0		5.0	5.0
Lane Grp Cap (vph)	791	1615	791	685
v/s Ratio Prot	0.01		c0.02	c0.02
v/s Ratio Perm		0.02		
v/c Ratio	0.03	0.02	0.04	0.04
Uniform Delay, d1	10.3	0.0	10.4	10.4
Progression Factor	1.00	1.00	0.77	1.00
Incremental Delay, d2	0.1	0.0	0.1	0.1
Delay (s)	10.4	0.0	8.1	10.5
Level of Service	B	A	A	B
Approach Delay (s/veh)			8.1	
Approach LOS			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.04		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	16.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	157	0	0	0	0	22		
Future Volume (vph)	157	0	0	0	0	22		
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	0	0	0	0	1900		
Flt Permitted	0.950							
Satd. Flow (perm)	1805	0	0	0	0	1900		
Right Turn on Red	No	No		No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	246		392		85			
Travel Time (s)	6.7		10.7		2.3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	171	0	0	0	0	24		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	171	0	0	0	0	24		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	L NA	Right	Left	Right	Left	Right		
Median Width(ft)	12		0		0			
Link Offset(ft)	0		0		12			
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	15	25		
Turn Type	Prot					Prot		
Protected Phases	8					2	4	6
Permitted Phases								
Minimum Split (s)	23.0					23.0	23.0	10.0
Total Split (s)	30.0					30.0	30.0	30.0
Total Split (%)	50.0%					50.0%	50%	50%
Maximum Green (s)	25.0					25.0	25.0	25.0
Yellow Time (s)	3.0					3.0	3.0	3.0
All-Red Time (s)	2.0					2.0	2.0	2.0
Lost Time Adjust (s)	0.0					0.0		
Total Lost Time (s)	5.0					5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)	7.0						7.0	
Flash Don't Walk (s)	11.0						11.0	
Pedestrian Calls (#/hr)	0						0	
Act Effct Green (s)	25.0					25.0		
Actuated g/C Ratio	0.42					0.42		
v/c Ratio	0.23					0.03		
Control Delay (s/veh)	12.3					1.5		
Queue Delay	0.0					0.0		

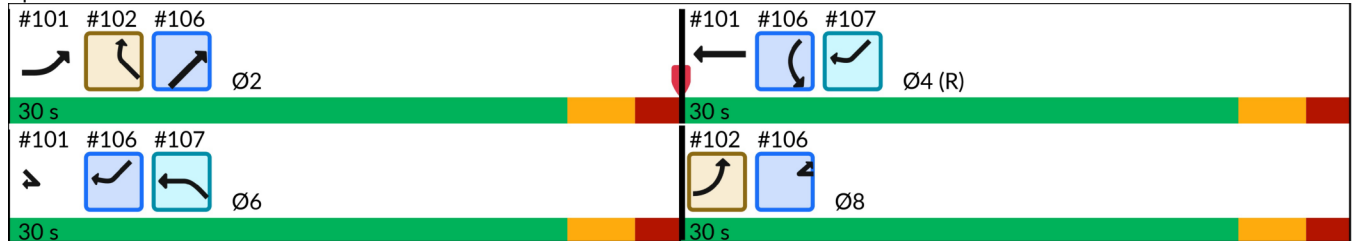


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	12.3							1.5
LOS	B							A
Approach Delay (s/veh)	12.3				1.5			
Approach LOS	B				A			
Queue Length 50th (ft)	38							0
Queue Length 95th (ft)	74							1
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	752							791
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.23							0.03

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.27
Intersection Signal Delay (s/veh):	11.0
Intersection LOS:	B
Intersection Capacity Utilization:	13.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 102: SB PWP to WB Clover Hill & Clover Hill Rd





Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	157	0	0	0	0	22
Future Volume (vph)	157	0	0	0	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0					5.0
Lane Util. Factor	1.00					1.00
Frt	1.00					1.00
Flt Protected	0.95					1.00
Satd. Flow (prot)	1805					1900
Flt Permitted	0.95					1.00
Satd. Flow (perm)	1805					1900
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	0	0	0	0	24
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	171	0	0	0	0	24
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot					Prot
Protected Phases	8					2
Permitted Phases						
Actuated Green, G (s)	25.0					25.0
Effective Green, g (s)	25.0					25.0
Actuated g/C Ratio	0.42					0.42
Clearance Time (s)	5.0					5.0
Lane Grp Cap (vph)	752					791
v/s Ratio Prot	c0.09					c0.01
v/s Ratio Perm						
v/c Ratio	0.23					0.03
Uniform Delay, d1	11.3					10.3
Progression Factor	1.00					0.14
Incremental Delay, d2	0.7					0.1
Delay (s)	12.0					1.5
Level of Service	B					A
Approach Delay (s/veh)	12.0		0.0		1.5	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	13.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	44	0	0	28
Future Volume (vph)	0	0	44	0	0	28
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						0.865
Fl _t Protected			0.950			
Satd. Flow (prot)	0	0	1805	0	0	1644
Fl _t Permitted			0.950			
Satd. Flow (perm)	0	0	1805	0	0	1644
Link Speed (mph)	30		30		30	
Link Distance (ft)	720		202		211	
Travel Time (s)	16.4		4.6		4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	48	0	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	48	0	0	30
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)	0		12		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	15	9
Sign Control	Free		Yield		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	15.3%
	ICU Level of Service A
Analysis Period (min)	15



Movement	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	0	0	44	0	0	28
Future Volume (Veh/h)	0	0	44	0	0	28
Sign Control	Free		Yield		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	48	0	0	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	211					
pX, platoon unblocked						
vC, conflicting volume			30	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			30	0	0	
tC, single (s)			6.4	6.2	4.1	
tC, 2 stage (s)						
tF (s)			3.5	3.3	2.2	
p0 queue free %			95	100	100	
cM capacity (veh/h)			989	1091	1636	
Direction, Lane #	SE 1	NE 1				
Volume Total	48	30				
Volume Left	48	0				
Volume Right	0	0				
cSH	989	1700				
Volume to Capacity	0.05	0.02				
Queue Length 95th (ft)	4	0				
Control Delay (s/veh)	8.8	0.0				
Lane LOS	A					
Approach Delay (s/veh)	8.8	0.0				
Approach LOS	A					
Intersection Summary						
Average Delay			5.4			
Intersection Capacity Utilization			15.3%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	53	165	53	194
Future Volume (vph)	53	165	53	194
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00
Fr _t	0.865			0.850
Flt Protected				
Satd. Flow (prot)	1508	1900	1900	1583
Flt Permitted				
Satd. Flow (perm)	1508	1900	1900	1583
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				211
Link Speed (mph)		25		
Link Distance (ft)		134		
Travel Time (s)		3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	0%	2%
Adj. Flow (vph)	58	179	58	211
Shared Lane Traffic (%)				
Lane Group Flow (vph)	58	179	58	211
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Right	Left	Left	Right
Median Width(ft)		12		
Link Offset(ft)		-6		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	9
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Minimum Split (s)	23.0	23.0	23.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Walk Time (s)	7.0		7.0	
Flash Don't Walk (s)	11.0		11.0	
Pedestrian Calls (#/hr)	0		0	
Act Effct Green (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
v/c Ratio	0.09	0.23	0.07	0.27
Control Delay (s/veh)	11.2	14.1	10.9	3.0
Queue Delay	0.0	0.0	0.0	0.0

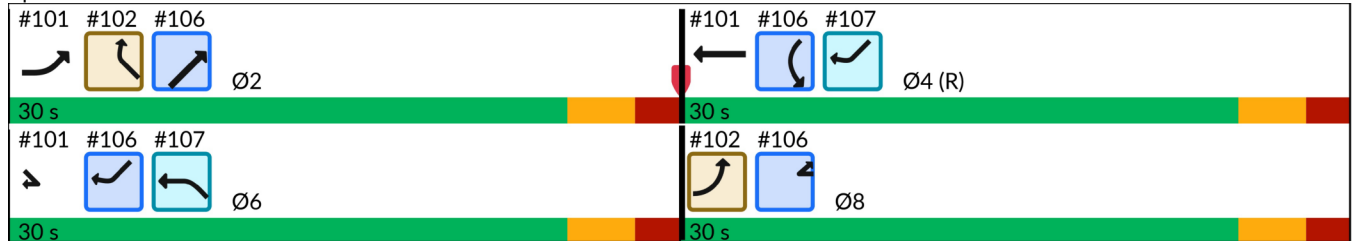


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.2	14.1	10.9	3.0
LOS	B	B	B	A
Approach Delay (s/veh)	14.1			
Approach LOS	B			
Queue Length 50th (ft)	12	58	12	0
Queue Length 95th (ft)	31	109	30	32
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	628	791	791	782
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.23	0.07	0.27

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.27
Intersection Signal Delay (s/veh):	8.8
Intersection LOS:	A
Intersection Capacity Utilization:	21.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 106: NB PWP to EB Clover Hill & Clover Hill Rd





Movement	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	53	165	53	194
Future Volume (vph)	53	165	53	194
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	0.87	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1508	1900	1900	1583
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1508	1900	1900	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	179	58	211
RTOR Reduction (vph)	0	0	0	123
Lane Group Flow (vph)	58	179	58	88
Heavy Vehicles (%)	9%	0%	0%	2%
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Actuated Green, G (s)	25.0	25.0	25.0	25.0
Effective Green, g (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	628	791	791	659
v/s Ratio Prot	c0.04	c0.09	0.03	0.06
v/s Ratio Perm				
v/c Ratio	0.09	0.23	0.07	0.13
Uniform Delay, d1	10.6	11.3	10.5	10.8
Progression Factor	1.00	1.16	1.00	1.00
Incremental Delay, d2	0.3	0.7	0.2	0.4
Delay (s)	10.9	13.8	10.7	11.2
Level of Service	B	B	B	B
Approach Delay (s/veh)		13.8		
Approach LOS		B		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	0	0	22	0	0	53		
Future Volume (vph)	0	0	22	0	0	53		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected			0.950					
Satd. Flow (prot)	0	0	1805	0	0	1900		
Flt Permitted			0.950					
Satd. Flow (perm)	0	0	1805	0	0	1900		
Right Turn on Red		No	No	No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	390		186		73			
Travel Time (s)	10.6		5.1		2.0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	0	0	24	0	0	58		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	24	0	0	58		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Right		
Median Width(ft)	0		12		0			
Link Offset(ft)	0		0		12			
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	15	9		
Turn Type			Prot			Prot		
Protected Phases			6			4	2	8
Permitted Phases								
Minimum Split (s)			10.0			23.0	23.0	23.0
Total Split (s)			30.0			30.0	30.0	30.0
Total Split (%)			50.0%			50.0%	50%	50%
Maximum Green (s)			25.0			25.0	25.0	25.0
Yellow Time (s)			3.0			3.0	3.0	3.0
All-Red Time (s)			2.0			2.0	2.0	2.0
Lost Time Adjust (s)			0.0			0.0		
Total Lost Time (s)			5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)						7.0		7.0
Flash Don't Walk (s)						11.0		11.0
Pedestrian Calls (#/hr)						0		0
Act Effct Green (s)			25.0			25.0		
Actuated g/C Ratio			0.42			0.42		
v/c Ratio			0.03			0.07		
Control Delay (s/veh)			10.6			1.3		
Queue Delay			0.0			0.0		

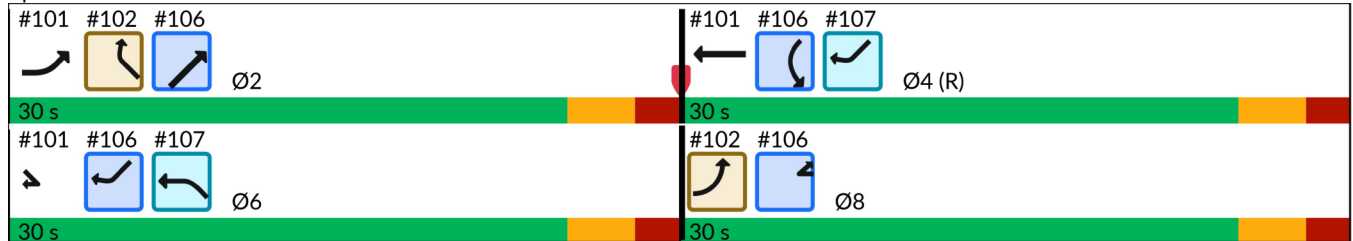


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			10.6			1.3		
LOS			B			A		
Approach Delay (s/veh)			10.6		1.3			
Approach LOS			B		A			
Queue Length 50th (ft)			5			1		
Queue Length 95th (ft)			16			2		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			752			791		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.03			0.07		

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.27
Intersection Signal Delay (s/veh):	4.0
Intersection LOS:	A
Intersection Capacity Utilization:	17.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 107: NB PWP to WB Clover Hill

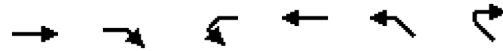


HCM Signalized Intersection Capacity Analysis
 107: NB PWP to WB Clover Hill

Manassas HEF EA
 09/16/2025

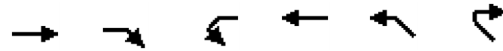


Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	22	0	0	53
Future Volume (vph)	0	0	22	0	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			1805			1900
Flt Permitted			0.95			1.00
Satd. Flow (perm)			1805			1900
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	24	0	0	58
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	24	0	0	58
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type			Prot			Prot
Protected Phases			6			4
Permitted Phases						
Actuated Green, G (s)			25.0			25.0
Effective Green, g (s)			25.0			25.0
Actuated g/C Ratio			0.42			0.42
Clearance Time (s)			5.0			5.0
Lane Grp Cap (vph)			752			791
v/s Ratio Prot			c0.01			c0.03
v/s Ratio Perm						
v/c Ratio			0.03			0.07
Uniform Delay, d1			10.3			10.5
Progression Factor			1.00			0.11
Incremental Delay, d2			0.1			0.2
Delay (s)			10.4			1.3
Level of Service			B			A
Approach Delay (s/veh)	0.0		10.4		1.3	
Approach LOS	A		B		A	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			4.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.05			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			17.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (vph)	0	0	0	194	14	0
Future Volume (vph)	0	0	0	194	14	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)	0	0	0	1863	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1863	1805	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	548			316	253	
Travel Time (s)	12.5			7.2	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%
Adj. Flow (vph)	0	0	0	211	15	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	211	15	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	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)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.4% ICU Level of Service A
Analysis Period (min)	15



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (veh/h)	0	0	0	194	14	0
Future Volume (Veh/h)	0	0	0	194	14	0
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	211	15	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)	316					
pX, platoon unblocked						
vC, conflicting volume			0	211	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	211	0	
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	100	
cM capacity (veh/h)			1636	782	1091	
Direction, Lane #	WB 1	NW 1				
Volume Total	211	15				
Volume Left	0	15				
Volume Right	0	0				
cSH	1700	782				
Volume to Capacity	0.12	0.02				
Queue Length 95th (ft)	0	1				
Control Delay (s/veh)	0.0	9.7				
Lane LOS			A			
Approach Delay (s/veh)	0.0	9.7				
Approach LOS			A			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			34.4%	ICU Level of Service	A	
Analysis Period (min)			15			

