














Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↑	↗	↖	↗
Traffic Volume (vph)	192	4	0	29	70	390
Future Volume (vph)	192	4	0	29	70	390
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	1420	1900	1615	1805	1553
Fl _t Permitted		0.953			0.950	
Satd. Flow (perm)	0	1420	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 (%)	28%	0%	0%	0%	0%	4%
Adj. Flow (vph)	209	4	0	32	76	424
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	213	0	32	76	424
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	27.5% ICU Level of Service A
Analysis Period (min)	15

















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

Manassas HEF EA
 09/16/2025

						
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	192	4	0	29	70	390
Future Volume (Veh/h)	192	4	0	29	70	390
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)	209	4	0	32	76	424
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	152	152	152	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	152	152	152	0	0	
tC, single (s)	7.4	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.8	4.0	4.0	3.3	2.2	
p0 queue free %	71	99	100	97	95	
cM capacity (veh/h)	711	709	709	1091	1636	
Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2	
Volume Total	213	0	32	76	424	
Volume Left	209	0	0	76	0	
Volume Right	0	0	32	0	424	
cSH	711	1700	1091	1636	1700	
Volume to Capacity	0.30	0.00	0.03	0.05	0.25	
Queue Length 95th (ft)	31	0	2	4	0	
Control Delay (s/veh)	12.2	0.0	8.4	7.3	0.0	
Lane LOS	B	A	A	A		
Approach Delay (s/veh)	12.2	8.4		1.1		
Approach LOS	B	A				
Intersection Summary						
Average Delay			4.6			
Intersection Capacity Utilization			27.5%		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	15	14	116	4	10	1	56	7	1
Future Volume (vph)	1	0	1	15	14	116	4	10	1	56	7	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.932			0.892			0.992			0.998	
Fl _t Protected		0.976			0.995			0.988			0.958	
Satd. Flow (prot)	0	1728	0	0	1647	0	0	1862	0	0	1788	0
Fl _t Permitted		0.976			0.995			0.988			0.958	
Satd. Flow (perm)	0	1728	0	0	1647	0	0	1862	0	0	1788	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%	3%	0%	0%	0%	0%	14%	0%
Adj. Flow (vph)	1	0	1	16	15	126	4	11	1	61	8	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	157	0	0	16	0	0	70	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	25.0%
	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	15	14	116	4	10	1	56	7	1
Future Volume (Veh/h)	1	0	1	15	14	116	4	10	1	56	7	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	16	15	126	4	11	1	61	8	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	158	151	9	151	151	12	9			12		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158	151	9	151	151	12	9			12		
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	88	100			96		
cM capacity (veh/h)	684	715	1079	795	715	1066	1624			1620		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	157	16	70								
Volume Left	1	16	4	61								
Volume Right	1	126	1	1								
cSH	837	986	1624	1620								
Volume to Capacity	0.00*	0.16	0.00*	0.04								
Queue Length 95th (ft)	0	14	0	3								
Control Delay (s/veh)	9.3	9.3	1.8	6.4								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	9.3	9.3	1.8	6.4								
Approach LOS	A	A										
Intersection Summary												
Average Delay			8.0									
Intersection Capacity Utilization			25.0%		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	15	14	116	4	10	1	56	7	1
Future Vol, veh/h	1	0	1	15	14	116	4	10	1	56	7	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	3	0	0	0	0	14	0
Mvmt Flow	1	0	1	16	15	126	4	11	1	61	8	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	158	151	9	151	151	12	9	0	0	12	0	0
Stage 1	131	131	-	20	20	-	-	-	-	-	-	-
Stage 2	27	20	-	131	131	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.23	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	3.327	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	813	744	1079	821	744	1066	1624	-	-	1620	-	-
Stage 1	877	792	-	1004	883	-	-	-	-	-	-	-
Stage 2	996	883	-	877	792	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	684	714	1079	796	714	1066	1624	-	-	1620	-	-
Mov Cap-2 Maneuver	684	714	-	796	714	-	-	-	-	-	-	-
Stage 1	875	762	-	1002	881	-	-	-	-	-	-	-
Stage 2	861	881	-	843	762	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	9.3		8.1		1.9		6.4	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1624	-	-	837	1333	1620	-	-
HCM Lane V/C Ratio	0.003	-	-	0.003	0.118	0.038	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	9.3	8.1	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	7	24	0
Future Volume (vph)	8	1	0	7	24	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	1827	0
Fl _t Permitted	0.950					
Satd. Flow (perm)	1805	1615	0	1900	1827	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%	4%	0%
Adj. Flow (vph)	9	1	0	8	26	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	1	0	8	26	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	7	24	0
Future Volume (Veh/h)	8	1	0	7	24	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	8	26	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	34	26	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	26	26			
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)	984	1056	1601			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	9	1	8	26		
Volume Left	9	0	0	0		
Volume Right	0	1	0	0		
cSH	984	1056	1700	1700		
Volume to Capacity	0.00*	0.00*	0.00*	0.02		
Queue Length 95th (ft)	1	0	0	0		
Control Delay (s/veh)	8.7	8.4	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	8.7		0.0	0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	2.0					
Intersection Capacity Utilization	13.3%			ICU Level of Service	A	
Analysis Period (min)	15					

* Value less than 0.01.

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	8	1	0	7	24	0
Future Vol, veh/h	8	1	0	7	24	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	4	0
Mvmt Flow	9	1	0	8	26	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	34	26	-	0	-	0
Stage 1	26	-	-	-	-	-
Stage 2	8	-	-	-	-	-
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	984	1056	0	-	-	0
Stage 1	1002	-	0	-	-	0
Stage 2	1020	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	984	1056	-	-	-	-
Mov Cap-2 Maneuver	984	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	1020	-	-	-	-	-

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)	-	984	1056	-
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)	10	0	15	112	64	25
Future Volume (vph)	10	0	15	112	64	25
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)	1388	0	0	1825	1863	1553
Fl _t Permitted	0.950			0.994		
Satd. Flow (perm)	1388	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 (%)	30%	0%	7%	3%	2%	4%
Adj. Flow (vph)	11	0	16	122	68	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	138	68	27
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	23.4%			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)	10	0	15	112	64	25
Future Volume (Veh/h)	10	0	15	112	64	25
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)	11	0	16	122	68	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	222	68	95			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	222	68	95			
tC, single (s)	6.7	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.3			
p0 queue free %	98	100	99			
cM capacity (veh/h)	700	1001	1468			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	11	138	68	27		
Volume Left	11	16	0	0		
Volume Right	0	0	0	27		
cSH	700	1468	1700	1700		
Volume to Capacity	0.02	0.01	0.04	0.02		
Queue Length 95th (ft)	1	1	0	0		
Control Delay (s/veh)	10.2	0.9	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s/veh)	10.2	0.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay	1.0					
Intersection Capacity Utilization	23.4%			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	10	0	15	112	64	25
Future Vol, veh/h	10	0	15	112	64	25
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, %	30	0	7	3	2	4
Mvmt Flow	11	0	16	122	68	27

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	222	68	95	0	0
Stage 1	68	-	-	-	-
Stage 2	154	-	-	-	-
Critical Hdwy	6.7	6.2	4.17	-	-
Critical Hdwy Stg 1	5.7	-	-	-	-
Critical Hdwy Stg 2	5.7	-	-	-	-
Follow-up Hdwy	3.77	3.3	2.263	-	-
Pot Cap-1 Maneuver	708	1001	1468	-	-
Stage 1	888	-	-	-	-
Stage 2	810	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	700	1001	1468	-	-
Mov Cap-2 Maneuver	700	-	-	-	-
Stage 1	877	-	-	-	-
Stage 2	810	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.2	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1468	-	700	-	-
HCM Lane V/C Ratio	0.011	-	0.016	-	-
HCM Ctrl Dly (s/v)	7.5	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

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



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	46	59	42	67	67	43
Future Volume (vph)	46	59	42	67	67	43
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	1827	1737	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1612	1615	1752	1827	1737	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%	4%	4%	3%
Adj. Flow (vph)	50	64	46	73	73	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	64	46	73	120	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	19.0%			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)	46	59	42	67	67	43
Future Volume (Veh/h)	46	59	42	67	67	43
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)	50	64	46	73	73	47
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	262	97	120			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	262	97	120			
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	93	97			
cM capacity (veh/h)	684	965	1462			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	50	64	46	73	120	
Volume Left	50	0	46	0	0	
Volume Right	0	64	0	0	47	
cSH	684	965	1462	1700	1700	
Volume to Capacity	0.07	0.07	0.03	0.04	0.07	
Queue Length 95th (ft)	6	5	2	0	0	
Control Delay (s/veh)	10.7	9.0	7.5	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	9.7		2.9		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			4.1			
Intersection Capacity Utilization			19.0%	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	46	59	42	67	67	43
Future Vol, veh/h	46	59	42	67	67	43
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	4	4	3
Mvmt Flow	50	64	46	73	73	47

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	262	97	120	0	0
Stage 1	97	-	-	-	-
Stage 2	165	-	-	-	-
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	706	965	1462	-	-
Stage 1	902	-	-	-	-
Stage 2	841	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	684	965	1462	-	-
Mov Cap-2 Maneuver	684	-	-	-	-
Stage 1	874	-	-	-	-
Stage 2	841	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.7	2.9	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1462	-	684	965	-	-
HCM Lane V/C Ratio	0.031	-	0.073	0.066	-	-
HCM Ctrl Dly (s/v)	7.5	-	10.7	9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.1	-	0.2	0.2	-	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	43	28	28	80	28
Future Volume (vph)	14	43	28	28	80	28
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	0.898		0.932			
Flt Protected	0.988					0.964
Satd. Flow (prot)	1686	0	1771	0	0	1717
Flt Permitted	0.988					0.964
Satd. Flow (perm)	1686	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)	15	47	30	30	87	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	62	0	60	0	0	117
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	22.7%
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)	14	43	28	28	80	28
Future Volume (Veh/h)	14	43	28	28	80	28
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)	15	47	30	30	87	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)						
pX, platoon unblocked						
vC, conflicting volume	249	45			60	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	249	45			60	
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	95			94	
cM capacity (veh/h)	701	1031			1500	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	62	60	117			
Volume Left	15	0	87			
Volume Right	47	30	0			
cSH	925	1700	1500			
Volume to Capacity	0.07	0.04	0.06			
Queue Length 95th (ft)	5	0	5			
Control Delay (s/veh)	9.2	0.0	5.7			
Lane LOS	A		A			
Approach Delay (s/veh)	9.2	0.0	5.7			
Approach LOS	A					
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization			22.7%		ICU Level of Service	A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	5.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	14	43	28	28	80	28
Future Vol, veh/h	14	43	28	28	80	28
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	9	0
Mvmt Flow	15	47	30	30	87	30

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	249	45	0	0	60	0
Stage 1	45	-	-	-	-	-
Stage 2	204	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.19	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.281	-
Pot Cap-1 Maneuver	744	1031	-	-	1500	-
Stage 1	983	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	700	1031	-	-	1500	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.2	0	5.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	924	1500
HCM Lane V/C Ratio	-	-	0.067	0.058
HCM Ctrl Dly (s/v)	-	-	9.2	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.2	0.2












Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	122	0	0	90
Future Volume (vph)	0	0	122	0	0	90
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	133	0	0	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	133	0	0	98
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	9.8%
	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	122	0	0	90
Future Volume (Veh/h)	0	0	122	0	0	90
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	133	0	0	98
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	231	133			133	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	231	133			133	
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)	762	922			1464	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	133	98			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1464			
Volume to Capacity	0.00	0.08	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			9.8%	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	122	0	0	90
Future Vol, veh/h	0	0	122	0	0	90
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	133	0	0	98

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	231	133	0	0	133
Stage 1	133	-	-	-	-
Stage 2	98	-	-	-	-
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	762	922	-	-	1464
Stage 1	898	-	-	-	-
Stage 2	931	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	762	922	-	-	1464
Mov Cap-2 Maneuver	762	-	-	-	-
Stage 1	898	-	-	-	-
Stage 2	931	-	-	-	-

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)	-	-	-	1464
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	122	0	0	90
Future Volume (vph)	0	0	122	0	0	90
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	133	0	0	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	133	0	0	98
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	9.8%			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	122	0	0	90
Future Volume (Veh/h)	0	0	122	0	0	90
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	133	0	0	98
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	231	133			133	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	231	133			133	
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)	762	922			1464	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	133	98			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1464			
Volume to Capacity	0.00	0.08	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			9.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	0	0	122	0	0	90
Future Vol, veh/h	0	0	122	0	0	90
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	133	0	0	98

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	231	133	0	0	133
Stage 1	133	-	-	-	-
Stage 2	98	-	-	-	-
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	762	922	-	-	1464
Stage 1	898	-	-	-	-
Stage 2	931	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	762	922	-	-	1464
Mov Cap-2 Maneuver	762	-	-	-	-
Stage 1	898	-	-	-	-
Stage 2	931	-	-	-	-

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)	-	-	-	1464
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)	36	90	109	13	0	0
Future Volume (vph)	36	90	109	13	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			
Flt Protected		0.986				
Satd. Flow (prot)	0	1834	1793	0	1900	0
Flt 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)	39	98	118	14	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	137	132	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	19.9%
	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)	36	90	109	13	0	0
Future Volume (Veh/h)	36	90	109	13	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)	39	98	118	14	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	132				301	125
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	132				301	125
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	100
cM capacity (veh/h)	1466				676	931
Direction, Lane #	SE 1	NW 1	SW 1			
Volume Total	137	132	0			
Volume Left	39	0	0			
Volume Right	0	14	0			
cSH	1466	1700	1700			
Volume to Capacity	0.03	0.08	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			19.9%	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	36	90	109	13	0	0
Future Vol, veh/h	36	90	109	13	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	39	98	118	14	0	0




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	132	0	-	0	301 125
Stage 1	-	-	-	-	125 -
Stage 2	-	-	-	-	176 -
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	1466	-	-	-	695 931
Stage 1	-	-	-	-	906 -
Stage 2	-	-	-	-	859 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1466	-	-	-	676 931
Mov Cap-2 Maneuver	-	-	-	-	676 -
Stage 1	-	-	-	-	881 -
Stage 2	-	-	-	-	859 -

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

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1466	-
HCM Lane V/C Ratio	-	-	0.027	-
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)	24	22	3	1	84	41	0	0	3	15	0	64
Future Volume (vph)	24	22	3	1	84	41	0	0	3	15	0	64
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		0.983			0.950			0.865				0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1703	3181	0	1805	3309	0	0	1644	0	0	1656	1509
Flt Permitted	0.950			0.950							0.950	
Satd. Flow (perm)	1703	3181	0	1805	3309	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)	26	24	3	1	91	45	0	0	3	16	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	27	0	1	136	0	0	3	0	0	16	70
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	24.5%
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)	24	22	3	1	84	41	0	0	3	15	0	64
Future Volume (Veh/h)	24	22	3	1	84	41	0	0	3	15	0	64
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)	26	24	3	1	91	45	0	0	3	16	0	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
4												
Median type												
None												
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume												
136												
vC1, stage 1 conf vol												
27												
vC2, stage 2 conf vol												
136												
vCu, unblocked vol												
27												
tC, single (s)												
4.2												
tC, 2 stage (s)												
4.1												
tF (s)												
2.3												
p0 queue free %												
98												
cM capacity (veh/h)												
1417												
1600												
727												
673												
1070												
730												
691												
965												
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	26	16	11	1	61	75	3	86				
Volume Left	26	0	0	1	0	0	0	16				
Volume Right	0	0	3	0	0	45	3	70				
cSH	1417	1700	1700	1600	1700	1700	1070	1186				
Volume to Capacity	0.02	0.00*	0.00*	0.00*	0.04	0.04	0.00*	0.07				
Queue Length 95th (ft)	1	0	0	0	0	0	0	6				
Control Delay (s/veh)	7.6	0.0	0.0	7.3	0.0	0.0	8.4	9.2				
Lane LOS	A			A			A	A				
Approach Delay (s/veh)	3.7			0.1			8.4	9.2				
Approach LOS							A	A				
Intersection Summary												
Average Delay												
3.7												
Intersection Capacity Utilization												
24.5%												
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	24	22	3	1	84	41	0	0	3	15	0	64
Future Vol, veh/h	24	22	3	1	84	41	0	0	3	15	0	64
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	26	24	3	1	91	45	0	0	3	16	0	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	136	0	0	27	0	0	126	216	14	180	195	68
Stage 1	-	-	-	-	-	-	78	78	-	116	116	-
Stage 2	-	-	-	-	-	-	48	138	-	64	79	-
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	1417	-	-	1600	-	-	841	685	1069	746	704	965
Stage 1	-	-	-	-	-	-	928	834	-	856	803	-
Stage 2	-	-	-	-	-	-	965	786	-	919	833	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1417	-	-	1600	-	-	769	672	1069	733	691	965
Mov Cap-2 Maneuver	-	-	-	-	-	-	769	672	-	733	691	-
Stage 1	-	-	-	-	-	-	911	819	-	841	802	-
Stage 2	-	-	-	-	-	-	895	785	-	899	818	-

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)	1069	1417	-	-	1600	-	-	733	965
HCM Lane V/C Ratio	0.003	0.018	-	-	0.001	-	-	0.022	0.072
HCM Ctrl Dly (s/v)	8.4	7.6	-	-	7.3	-	-	10	9
HCM Lane LOS	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0	0.1	-	-	0	-	-	0.1	0.2



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	105	115	287	174	
Future Volume (vph)	105	115	287	174	
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)	1166	1482	1827	1536	
Fl _t Permitted					
Satd. Flow (perm)	1166	1482	1827	1536	
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 (%)	63%	9%	4%	7%	
Adj. Flow (vph)	114	125	312	189	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	114	125	312	189	
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	0.24	0.08	0.41	0.30	
Control Delay (s/veh)	13.0	0.1	13.8	13.3	
Queue Delay	0.0	0.0	0.0	0.0	

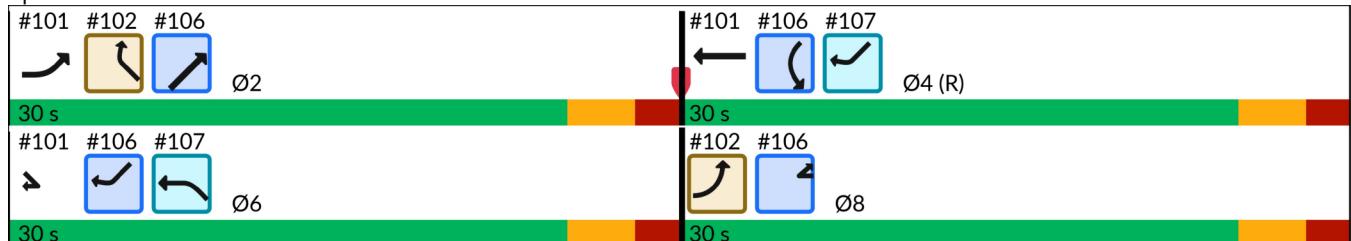


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	13.0	0.1	13.8	13.3	
LOS	B	A	B	B	
Approach Delay (s/veh)			13.8		
Approach LOS			B		
Queue Length 50th (ft)	25	0	88	44	
Queue Length 95th (ft)	56	0	147	84	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	485	1482	761	640	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.24	0.08	0.41	0.30	

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:	0.41
Intersection Signal Delay (s/veh):	11.2
Intersection LOS:	B
Intersection Capacity Utilization:	34.2%
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





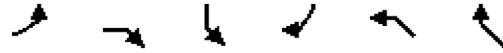
Movement	EBL	EBR	WBT	SER
Lane Configurations	↖	↗	↖	↗
Traffic Volume (vph)	105	115	287	174
Future Volume (vph)	105	115	287	174
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.87
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1166	1482	1827	1536
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1166	1482	1827	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	125	312	189
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	114	125	312	189
Heavy Vehicles (%)	63%	9%	4%	7%
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)	485	1482	761	640
v/s Ratio Prot	0.10		c0.17	c0.12
v/s Ratio Perm		0.08		
v/c Ratio	0.24	0.08	0.41	0.30
Uniform Delay, d1	11.3	0.0	12.3	11.6
Progression Factor	1.00	1.00	0.95	1.00
Incremental Delay, d2	1.1	0.1	1.6	1.2
Delay (s)	12.5	0.1	13.3	12.8
Level of Service	B	A	B	B
Approach Delay (s/veh)			13.3	
Approach LOS			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



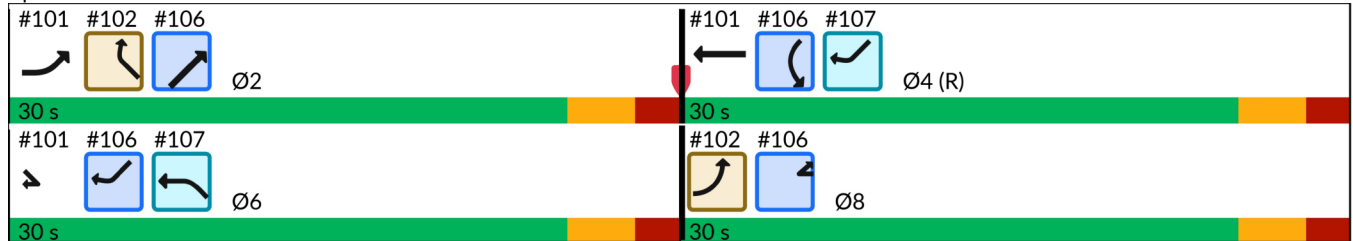
Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	56	0	0	0	0	105		
Future Volume (vph)	56	0	0	0	0	105		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected	0.950							
Satd. Flow (prot)	1492	0	0	0	0	1166		
Flt Permitted	0.950							
Satd. Flow (perm)	1492	0	0	0	0	1166		
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 (%)	21%	0%	0%	0%	0%	63%		
Adj. Flow (vph)	61	0	0	0	0	114		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	61	0	0	0	0	114		
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	0.10					0.24		
Control Delay (s/veh)	11.3					2.4		
Queue Delay	0.0					0.0		

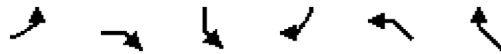


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	11.3							2.4
LOS	B							A
Approach Delay (s/veh)	11.3				2.4			
Approach LOS	B				A			
Queue Length 50th (ft)	13							2
Queue Length 95th (ft)	32							4
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	621							485
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.10							0.24

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:	0.41
Intersection Signal Delay (s/veh):	5.5
Intersection LOS:	A
Intersection Capacity Utilization:	17.0%
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)	56	0	0	0	0	105
Future Volume (vph)	56	0	0	0	0	105
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)	1492					1166
Flt Permitted	0.95					1.00
Satd. Flow (perm)	1492					1166
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	0	0	0	0	114
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	61	0	0	0	0	114
Heavy Vehicles (%)	21%	0%	0%	0%	0%	63%
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)	621					485
v/s Ratio Prot	c0.04					c0.10
v/s Ratio Perm						
v/c Ratio	0.10					0.24
Uniform Delay, d1	10.6					11.3
Progression Factor	1.00					0.11
Incremental Delay, d2	0.3					1.1
Delay (s)	11.0					2.4
Level of Service	B					A
Approach Delay (s/veh)	11.0		0.0		2.4	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
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	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	62	0	0	115
Future Volume (vph)	0	0	62	0	0	115
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	1556	0	0	1508
Fl _t Permitted			0.950			
Satd. Flow (perm)	0	0	1556	0	0	1508
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%	16%	0%	0%	9%
Adj. Flow (vph)	0	0	67	0	0	125
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	67	0	0	125
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	31.6%
	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	115
Future Volume (Veh/h)	0	0	62	0	0	115
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	125
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			125	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			125	0	0	
tC, single (s)			6.6	6.2	4.1	
tC, 2 stage (s)						
tF (s)			3.6	3.3	2.2	
p0 queue free %			92	100	100	
cM capacity (veh/h)			838	1091	1636	
Direction, Lane #	SE 1	NE 1				
Volume Total	67	125				
Volume Left	67	0				
Volume Right	0	0				
cSH	838	1700				
Volume to Capacity	0.08	0.07				
Queue Length 95th (ft)	7	0				
Control Delay (s/veh)	9.7	0.0				
Lane LOS	A					
Approach Delay (s/veh)	9.7	0.0				
Approach LOS	A					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			31.6%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	50	70	110	255
Future Volume (vph)	50	70	110	255
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)	1417	1624	1743	1538
Flt Permitted				
Satd. Flow (perm)	1417	1624	1743	1538
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				277
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 (%)	16%	17%	9%	5%
Adj. Flow (vph)	54	76	120	277
Shared Lane Traffic (%)				
Lane Group Flow (vph)	54	76	120	277
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	0.11	0.17	0.35
Control Delay (s/veh)	11.2	8.9	11.8	3.1
Queue Delay	0.0	0.0	0.0	0.0

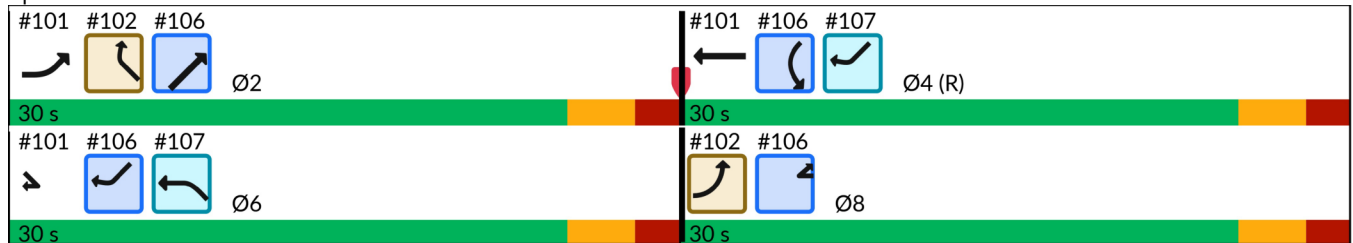


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.2	8.9	11.8	3.1
LOS	B	A	B	A
Approach Delay (s/veh)	8.9			
Approach LOS	A			
Queue Length 50th (ft)	11	13	26	0
Queue Length 95th (ft)	30	30	55	37
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	590	676	726	802
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.11	0.17	0.35

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:	0.41
Intersection Signal Delay (s/veh):	6.8
Intersection LOS:	A
Intersection Capacity Utilization:	20.0%
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)	50	70	110	255
Future Volume (vph)	50	70	110	255
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)	1417	1624	1743	1538
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1417	1624	1743	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	76	120	277
RTOR Reduction (vph)	0	0	0	162
Lane Group Flow (vph)	54	76	120	115
Heavy Vehicles (%)	16%	17%	9%	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)	590	676	726	640
v/s Ratio Prot	0.04	0.05	c0.07	c0.08
v/s Ratio Perm				
v/c Ratio	0.09	0.11	0.17	0.18
Uniform Delay, d1	10.6	10.7	11.0	11.0
Progression Factor	1.00	0.78	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.5	0.6
Delay (s)	10.9	8.7	11.5	11.7
Level of Service	B	A	B	B
Approach Delay (s/veh)		8.7		
Approach LOS		A		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.17		
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	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	0	0	239	0	0	110		
Future Volume (vph)	0	0	239	0	0	110		
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	1719	0	0	1743		
Flt Permitted			0.950					
Satd. Flow (perm)	0	0	1719	0	0	1743		
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%	5%	0%	0%	9%		
Adj. Flow (vph)	0	0	260	0	0	120		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	260	0	0	120		
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			0.36			0.17		
Control Delay (s/veh)			13.9			1.7		
Queue Delay			0.0			0.0		

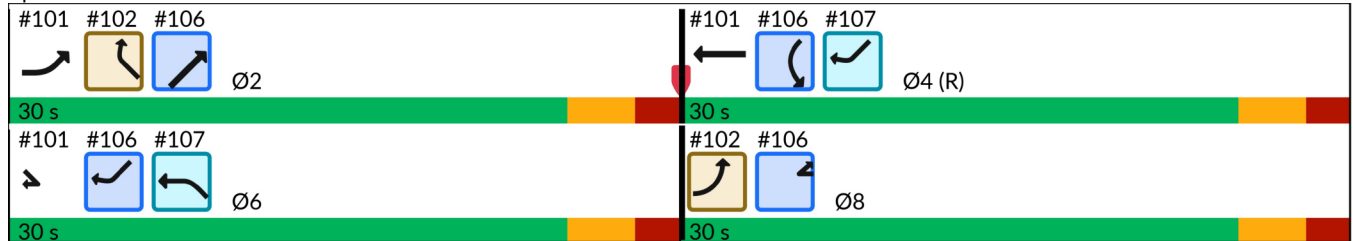


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			13.9			1.7		
LOS			B			A		
Approach Delay (s/veh)			13.9		1.7			
Approach LOS			B		A			
Queue Length 50th (ft)			62			2		
Queue Length 95th (ft)			112			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			716			726		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.36			0.17		

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:	0.41
Intersection Signal Delay (s/veh):	10.0
Intersection LOS:	B
Intersection Capacity Utilization:	30.2%
ICU Level of Service:	A
Analysis Period (min):	15

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

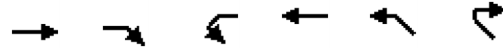


HCM Signalized Intersection Capacity Analysis
 107: NB PWP to WB Clover Hill

Manassas HEF EA
 09/16/2025



Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	239	0	0	110
Future Volume (vph)	0	0	239	0	0	110
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)			1719			1743
Flt Permitted			0.95			1.00
Satd. Flow (perm)			1719			1743
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	260	0	0	120
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	260	0	0	120
Heavy Vehicles (%)	0%	0%	5%	0%	0%	9%
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)			716			726
v/s Ratio Prot			c0.15			c0.07
v/s Ratio Perm						
v/c Ratio			0.36			0.17
Uniform Delay, d1			12.0			11.0
Progression Factor			1.00			0.10
Incremental Delay, d2			1.4			0.5
Delay (s)			13.5			1.6
Level of Service			B			A
Approach Delay (s/veh)	0.0		13.5		1.6	
Approach LOS	A		B		A	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			9.7		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.26			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			30.2%		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	255	91	0
Future Volume (vph)	0	0	0	255	91	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	1043	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1810	1043	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%	73%	0%
Adj. Flow (vph)	0	0	0	277	99	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	277	99	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	37.6% 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	255	91	0
Future Volume (Veh/h)	0	0	0	255	91	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	277	99	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	277	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	277	0	
tC, single (s)			4.1	7.1	6.2	
tC, 2 stage (s)						
tF (s)			2.2	4.2	3.3	
p0 queue free %			100	83	100	
cM capacity (veh/h)			1636	585	1091	
Direction, Lane #	WB 1	NW 1				
Volume Total	277	99				
Volume Left	0	99				
Volume Right	0	0				
cSH	1700	585				
Volume to Capacity	0.16	0.17				
Queue Length 95th (ft)	0	15				
Control Delay (s/veh)	0.0	12.4				
Lane LOS			B			
Approach Delay (s/veh)	0.0	12.4				
Approach LOS			B			
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			37.6%	ICU Level of Service		A
Analysis Period (min)			15			














Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↑	↗	↖	↗
Traffic Volume (vph)	312	1	6	69	0	142
Future Volume (vph)	312	1	6	69	0	142
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)	339	1	7	75	0	154
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	340	7	75	0	154
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	28.3%
	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)	312	1	6	69	0	142
Future Volume (Veh/h)	312	1	6	69	0	142
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)	339	1	7	75	0	154
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	4	0	0	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4	0	0	0	0	
tC, single (s)	7.1	6.5	6.5	6.3	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.4	2.2	
p0 queue free %	64	100	99	93	100	
cM capacity (veh/h)	941	900	900	1073	1636	
Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2	
Volume Total	340	7	75	0	154	
Volume Left	339	0	0	0	0	
Volume Right	0	0	75	0	154	
cSH	941	900	1073	1700	1700	
Volume to Capacity	0.36	0.00*	0.07	0.00	0.09	
Queue Length 95th (ft)	42	1	6	0	0	
Control Delay (s/veh)	11.0	9.0	8.6	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	11.0	8.6		0.0		
Approach LOS	B	A				
Intersection Summary						
Average Delay			7.7			
Intersection Capacity Utilization			28.3%	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)	10	6	6	6	4	90	3	11	17	83	10	0
Future Volume (vph)	10	6	6	6	4	90	3	11	17	83	10	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		0.962			0.879			0.926				
Fl _t Protected		0.978			0.997			0.995			0.957	
Satd. Flow (prot)	0	1788	0	0	1567	0	0	1695	0	0	1737	0
Fl _t Permitted		0.978			0.997			0.995			0.957	
Satd. Flow (perm)	0	1788	0	0	1567	0	0	1695	0	0	1737	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%	7%	0%	0%	6%	4%	10%	0%
Adj. Flow (vph)	11	7	7	7	4	98	3	12	18	90	11	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	109	0	0	33	0	0	101	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	24.6%
	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)	10	6	6	6	4	90	3	11	17	83	10	0
Future Volume (Veh/h)	10	6	6	6	4	90	3	11	17	83	10	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)	11	7	7	7	4	98	3	12	18	90	11	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	220	227	11	229	218	21	11			30		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	220	227	11	229	218	21	11			30		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	98	99	99	99	99	91	100			94		
cM capacity (veh/h)	637	636	1076	688	643	1042	1621			1570		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	25	109	33	101								
Volume Left	11	7	3	90								
Volume Right	7	98	18	0								
cSH	719	987	1621	1570								
Volume to Capacity	0.03	0.11	0.00*	0.06								
Queue Length 95th (ft)	3	9	0	5								
Control Delay (s/veh)	10.2	9.1	0.7	6.7								
Lane LOS	B	A	A	A								
Approach Delay (s/veh)	10.2	9.1	0.7	6.7								
Approach LOS	B	A										
Intersection Summary												
Average Delay			7.2									
Intersection Capacity Utilization			24.6%		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	10	6	6	6	4	90	3	11	17	83	10	0
Future Vol, veh/h	10	6	6	6	4	90	3	11	17	83	10	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	7	0	0	6	4	10	0
Mvmt Flow	11	7	7	7	4	98	3	12	18	90	11	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	220	227	11	225	218	21	11	0	0	30	0	0
Stage 1	191	191	-	27	27	-	-	-	-	-	-	-
Stage 2	29	36	-	198	191	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.27	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	3.363	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	740	676	1076	735	684	1042	1621	-	-	1570	-	-
Stage 1	815	746	-	996	877	-	-	-	-	-	-	-
Stage 2	993	869	-	808	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	636	635	1076	692	643	1042	1621	-	-	1570	-	-
Mov Cap-2 Maneuver	636	635	-	692	643	-	-	-	-	-	-	-
Stage 1	813	703	-	994	875	-	-	-	-	-	-	-
Stage 2	894	867	-	750	703	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	10.2		8.4		0.7		6.6	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1621	-	-	715	1158	1570	-	-
HCM Lane V/C Ratio	0.002	-	-	0.033	0.094	0.057	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	10.2	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)	6	0	0	25	21	0
Future Volume (vph)	6	0	0	25	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1805	1900	0	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)	7	0	0	27	23	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	27	23	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%
	ICU Level of Service A
Analysis Period (min)	15

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	0	0	25	21	0
Future Volume (Veh/h)	6	0	0	25	21	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	0	0	27	23	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	50	23	23			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	50	23	23			
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)	964	1060	1605			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	7	0	27	23		
Volume Left	7	0	0	0		
Volume Right	0	0	0	0		
cSH	964	1700	1700	1700		
Volume to Capacity	0.00*	0.00	0.02	0.01		
Queue Length 95th (ft)	1	0	0	0		
Control Delay (s/veh)	8.8	0.0	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	8.8		0.0	0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

* Value less than 0.01.

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑	↑	
Traffic Vol, veh/h	6	0	0	25	21	0
Future Vol, veh/h	6	0	0	25	21	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	7	0	0	27	23	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	50	23	-	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	27	-	-	-	-	-
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	964	1060	0	-	-	0
Stage 1	1005	-	0	-	-	0
Stage 2	1001	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	964	1060	-	-	-	-
Mov Cap-2 Maneuver	964	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	1001	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	964	-	-
HCM Lane V/C Ratio	-	0.007	-	-
HCM Ctrl Dly (s/v)	-	8.8	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)	18	7	7	104	85	15
Future Volume (vph)	18	7	7	104	85	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	0.961					0.850
Flt Protected	0.966			0.997		
Satd. Flow (prot)	1764	0	0	1810	1810	1615
Flt Permitted	0.966			0.997		
Satd. Flow (perm)	1764	0	0	1810	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%	14%	4%	5%	0%
Adj. Flow (vph)	20	8	8	113	92	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	0	0	121	92	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	21.2%			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)	18	7	7	104	85	15
Future Volume (Veh/h)	18	7	7	104	85	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)	20	8	8	113	92	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	221	92	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	221	92	108			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	97	99	99			
cM capacity (veh/h)	767	971	1411			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	28	121	92	16		
Volume Left	20	8	0	0		
Volume Right	8	0	0	16		
cSH	816	1411	1700	1700		
Volume to Capacity	0.03	0.00*	0.05	0.00*		
Queue Length 95th (ft)	3	0	0	0		
Control Delay (s/veh)	9.6	0.5	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	9.6	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	1.3					
Intersection Capacity Utilization	21.2%			ICU Level of Service	A	
Analysis Period (min)	15					

* Value less than 0.01.

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	Y
Traffic Vol, veh/h	18	7	7	104	85	15
Future Vol, veh/h	18	7	7	104	85	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	14	4	5	0
Mvmt Flow	20	8	8	113	92	16

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	221	92	108	0	0
Stage 1	92	-	-	-	-
Stage 2	129	-	-	-	-
Critical Hdwy	6.4	6.2	4.24	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.326	-	-
Pot Cap-1 Maneuver	772	971	1411	-	-
Stage 1	937	-	-	-	-
Stage 2	902	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	767	971	1411	-	-
Mov Cap-2 Maneuver	767	-	-	-	-
Stage 1	931	-	-	-	-
Stage 2	902	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.6	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1411	-	815	-	-
HCM Lane V/C Ratio	0.005	-	0.033	-	-
HCM Ctrl Dly (s/v)	7.6	0	9.6	-	-
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)	28	42	85	98	43	36
Future Volume (vph)	28	42	85	98	43	36
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			0.939	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1570	1509	1770	1845	1618	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1570	1509	1770	1845	1618	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)	30	46	92	107	47	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	46	92	107	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.4%			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)	28	42	85	98	43	36
Future Volume (Veh/h)	28	42	85	98	43	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)	30	46	92	107	47	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	358	67	86			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	358	67	86			
tC, single (s)	6.6	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	95	95	94			
cM capacity (veh/h)	578	983	1510			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	30	46	92	107	86	
Volume Left	30	0	92	0	0	
Volume Right	0	46	0	0	39	
cSH	578	983	1510	1700	1700	
Volume to Capacity	0.05	0.05	0.06	0.06	0.05	
Queue Length 95th (ft)	4	4	5	0	0	
Control Delay (s/veh)	11.6	8.8	7.5	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	9.9		3.5		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			21.4%	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	28	42	85	98	43	36
Future Vol, veh/h	28	42	85	98	43	36
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	30	46	92	107	47	39

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	358	67	86	0	0
Stage 1	67	-	-	-	-
Stage 2	291	-	-	-	-
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	615	983	1510	-	-
Stage 1	924	-	-	-	-
Stage 2	730	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	577	983	1510	-	-
Mov Cap-2 Maneuver	577	-	-	-	-
Stage 1	868	-	-	-	-
Stage 2	730	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.9	3.5	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1510	-	577	983	-	-
HCM Lane V/C Ratio	0.061	-	0.053	0.046	-	-
HCM Ctrl Dly (s/v)	7.5	-	11.6	8.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.2	-	0.2	0.1	-	-

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	92	39	11	36	39
Future Volume (vph)	39	92	39	11	36	39
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					0.976
Satd. Flow (prot)	1636	0	1843	0	0	1753
Flt Permitted	0.985					0.976
Satd. Flow (perm)	1636	0	1843	0	0	1753
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)	42	100	42	12	39	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	0	54	0	0	81
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	25.2%		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)	39	92	39	11	36	39
Future Volume (Veh/h)	39	92	39	11	36	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)	42	100	42	12	39	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	168	48			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	168	48			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 %	95	90			97	
cM capacity (veh/h)	805	1012			1490	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	142	54	81			
Volume Left	42	0	39			
Volume Right	100	12	0			
cSH	941	1700	1490			
Volume to Capacity	0.15	0.03	0.03			
Queue Length 95th (ft)	13	0	2			
Control Delay (s/veh)	9.5	0.0	3.7			
Lane LOS	A		A			
Approach Delay (s/veh)	9.5	0.0	3.7			
Approach LOS	A					
Intersection Summary						
Average Delay			6.0			
Intersection Capacity Utilization			25.2%		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	39	92	39	11	36	39
Future Vol, veh/h	39	92	39	11	36	39
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	42	100	42	12	39	42

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	168	48	0	0	54
Stage 1	48	-	-	-	-
Stage 2	120	-	-	-	-
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	827	1012	-	-	1490
Stage 1	980	-	-	-	-
Stage 2	910	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	805	1012	-	-	1490
Mov Cap-2 Maneuver	805	-	-	-	-
Stage 1	980	-	-	-	-
Stage 2	885	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.5	0	3.6
HCM LOS	A		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	940	1490
HCM Lane V/C Ratio	-	-	0.151	0.026
HCM Ctrl Dly (s/v)	-	-	9.5	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.5	0.1

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	122	0	0	101
Future Volume (vph)	0	0	122	0	0	101
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	133	0	0	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	133	0	0	110
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	9.8%			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	122	0	0	101
Future Volume (Veh/h)	0	0	122	0	0	101
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	133	0	0	110
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	243	133			133	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	243	133			133	
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)	750	922			1464	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	133	110			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1464			
Volume to Capacity	0.00	0.08	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			9.8%	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	122	0	0	101
Future Vol, veh/h	0	0	122	0	0	101
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	133	0	0	110

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	243	133	0	0	133	0
Stage 1	133	-	-	-	-	-
Stage 2	110	-	-	-	-	-
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	750	922	-	-	1464	-
Stage 1	898	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	750	922	-	-	1464	-
Mov Cap-2 Maneuver	750	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	920	-	-	-	-	-

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)	-	-	-	1464
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	122	0	0	101
Future Volume (vph)	0	0	122	0	0	101
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	133	0	0	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	133	0	0	110
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	9.8%			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	122	0	0	101
Future Volume (Veh/h)	0	0	122	0	0	101
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	133	0	0	110
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	243	133			133	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	243	133			133	
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)	750	922			1464	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	133	110			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1464			
Volume to Capacity	0.00	0.08	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			9.8%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			A
Traffic Vol, veh/h	0	0	122	0	0	101
Future Vol, veh/h	0	0	122	0	0	101
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	133	0	0	110

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	243	133	0	0	133	0
Stage 1	133	-	-	-	-	-
Stage 2	110	-	-	-	-	-
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	750	922	-	-	1464	-
Stage 1	898	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	750	922	-	-	1464	-
Mov Cap-2 Maneuver	750	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	920	-	-	-	-	-

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)	-	-	-	1464
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
 14: Wakeman Dr & Employee Lot



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	85	122	0	15	62
Future Volume (vph)	0	85	122	0	15	62
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					0.891	
Fl _t Protected					0.990	
Satd. Flow (prot)	0	1810	1845	0	1676	0
Fl _t Permitted					0.990	
Satd. Flow (perm)	0	1810	1845	0	1676	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	92	133	0	16	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	92	133	0	83	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	17.7%
	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	85	122	0	15	62
Future Volume (Veh/h)	0	85	122	0	15	62
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	92	133	0	16	67
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	133				225	133
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	133				225	133
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)	1464				768	922
Direction, Lane #	SE 1	NW 1	SW 1			
Volume Total	92	133	83			
Volume Left	0	0	16			
Volume Right	0	0	67			
cSH	1464	1700	887			
Volume to Capacity	0.00	0.08	0.09			
Queue Length 95th (ft)	0	0	8			
Control Delay (s/veh)	0.0	0.0	9.5			
Lane LOS			A			
Approach Delay (s/veh)	0.0	0.0	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			17.7%	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	85	122	0	15	62
Future Vol, veh/h	0	85	122	0	15	62
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	92	133	0	16	67




















Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	133	0	-	0	225	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	92	-
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	1464	-	-	-	768	922
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1464	-	-	-	768	922
Mov Cap-2 Maneuver	-	-	-	-	768	-
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	937	-

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1464	- 887
HCM Lane V/C Ratio	-	-	-	- 0.094
HCM Ctrl Dly (s/v)	-	-	0	- 9.5
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)	83	71	1	15	22	45	3	4	13	50	6	46
Future Volume (vph)	83	71	1	15	22	45	3	4	13	50	6	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			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			0.910				0.850
Flt Protected	0.950			0.950				0.993			0.958	
Satd. Flow (prot)	1805	3339	0	1517	3112	0	0	1600	0	0	1728	1524
Flt Permitted	0.950			0.950				0.993			0.958	
Satd. Flow (perm)	1805	3339	0	1517	3112	0	0	1600	0	0	1728	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%	19%	13%	0%	0%	0%	11%	6%	0%	6%
Adj. Flow (vph)	90	77	1	16	24	49	3	4	14	54	7	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	78	0	16	73	0	0	21	0	0	61	50
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	27.7%						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)	83	71	1	15	22	45	3	4	13	50	6	46
Future Volume (Veh/h)	83	71	1	15	22	45	3	4	13	50	6	46
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)	90	77	1	16	24	49	3	4	14	54	7	50
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	73			78			330	363	39	315	339	37
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	73			78			330	363	39	315	339	37
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 %	94			99			99	99	99	90	99	95
cM capacity (veh/h)	1540			1403			539	529	996	561	545	1015
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	90	51	27	16	16	57	21	111				
Volume Left	90	0	0	16	0	0	3	54				
Volume Right	0	0	1	0	0	49	14	50				
cSH	1540	1700	1700	1403	1700	1700	772	1018				
Volume to Capacity	0.06	0.03	0.02	0.01	0.00*	0.03	0.03	0.11				
Queue Length 95th (ft)	5	0	0	1	0	0	2	9				
Control Delay (s/veh)	7.5	0.0	0.0	7.6	0.0	0.0	9.8	10.7				
Lane LOS	A			A			A	B				
Approach Delay (s/veh)	4.0			1.4			9.8	10.7				
Approach LOS							A	B				
Intersection Summary												
Average Delay			5.6									
Intersection Capacity Utilization			27.7%			ICU Level of Service		A				
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	↕
Traffic Vol, veh/h	83	71	1	15	22	45	3	4	13	50	6	46
Future Vol, veh/h	83	71	1	15	22	45	3	4	13	50	6	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	8	0	19	13	0	0	0	11	6	0	6
Mvmt Flow	90	77	1	16	24	49	3	4	14	54	7	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	73	0	0	78	0	0	306	363	39	302	339	37
Stage 1	-	-	-	-	-	-	258	258	-	81	81	-
Stage 2	-	-	-	-	-	-	48	105	-	221	258	-
Critical Hdwy	4.1	-	-	4.48	-	-	7.5	6.5	7.12	7.62	6.5	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.62	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.62	5.5	-
Follow-up Hdwy	2.2	-	-	2.39	-	-	3.5	4	3.41	3.56	4	3.36
Pot Cap-1 Maneuver	1540	-	-	1403	-	-	629	568	996	617	586	1014
Stage 1	-	-	-	-	-	-	730	698	-	907	832	-
Stage 2	-	-	-	-	-	-	965	812	-	750	698	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1540	-	-	1403	-	-	561	529	996	573	546	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	561	529	-	573	546	-
Stage 1	-	-	-	-	-	-	688	658	-	854	823	-
Stage 2	-	-	-	-	-	-	900	803	-	692	658	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	4			1.4			9.8			10.6		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	770	1540	-	-	1403	-	-	570	1014
HCM Lane V/C Ratio	0.028	0.059	-	-	0.012	-	-	0.107	0.049
HCM Ctrl Dly (s/v)	9.8	7.5	-	-	7.6	-	-	12.1	8.7
HCM Lane LOS	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0.1	0.2	-	-	0	-	-	0.4	0.2



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	160	221	98	44	
Future Volume (vph)	160	221	98	44	
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)	1792	1568	1827	1294	
Fl _t Permitted					
Satd. Flow (perm)	1792	1568	1827	1294	
Right Turn on Red		Yes		No	
Satd. Flow (RTOR)		240			
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 (%)	6%	3%	4%	27%	
Adj. Flow (vph)	174	240	107	48	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	174	240	107	48	
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	0.23	0.15	0.14	0.09	
Control Delay (s/veh)	12.4	0.2	10.1	11.2	
Queue Delay	0.0	0.0	0.0	0.0	

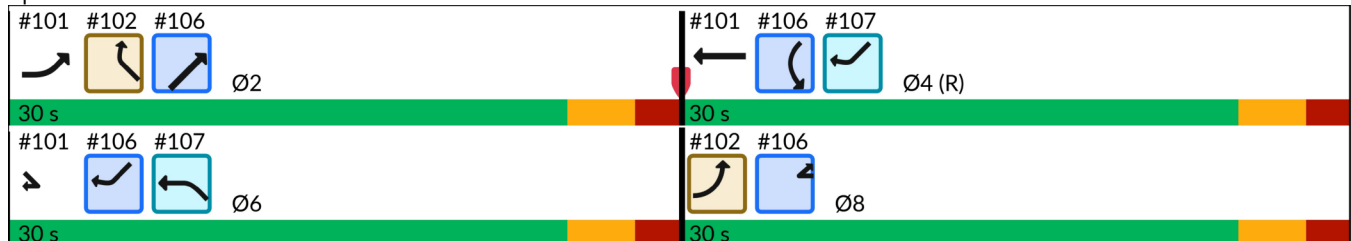


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	12.4	0.2	10.1	11.2	
LOS	B	A	B	B	
Approach Delay (s/veh)			10.1		
Approach LOS			B		
Queue Length 50th (ft)	39	0	22	10	
Queue Length 95th (ft)	75	0	46	27	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	746	1568	761	539	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.23	0.15	0.14	0.09	

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:	0.35
Intersection Signal Delay (s/veh):	6.7
Intersection LOS:	A
Intersection Capacity Utilization:	18.9%
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)	160	221	98	44
Future Volume (vph)	160	221	98	44
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)	1792	1568	1827	1294
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1792	1568	1827	1294
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	240	107	48
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	174	240	107	48
Heavy Vehicles (%)	6%	3%	4%	27%
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)	746	1568	761	539
v/s Ratio Prot	c0.10		0.06	0.04
v/s Ratio Perm		c0.15		
v/c Ratio	0.23	0.15	0.14	0.09
Uniform Delay, d1	11.3	0.0	10.8	10.6
Progression Factor	1.00	1.00	0.87	1.00
Incremental Delay, d2	0.7	0.2	0.4	0.3
Delay (s)	12.0	0.2	9.8	10.9
Level of Service	B	A	A	B
Approach Delay (s/veh)			9.8	
Approach LOS			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	18.9%	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)	217	0	0	0	0	160		
Future Volume (vph)	217	0	0	0	0	160		
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	1792		
Flt Permitted	0.950							
Satd. Flow (perm)	1787	0	0	0	0	1792		
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%	6%		
Adj. Flow (vph)	228	0	0	0	0	174		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	228	0	0	0	0	174		
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	0.31					0.23		
Control Delay (s/veh)	13.1					2.0		
Queue Delay	0.0					0.0		

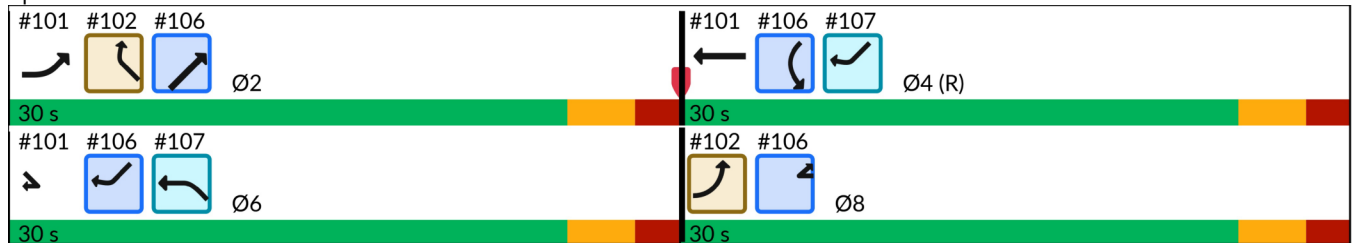


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	13.1							2.0
LOS	B							A
Approach Delay (s/veh)	13.1				2.0			
Approach LOS	B				A			
Queue Length 50th (ft)	53							3
Queue Length 95th (ft)	96							5
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	744							746
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.31							0.23

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:	0.35
Intersection Signal Delay (s/veh):	8.3
Intersection LOS:	A
Intersection Capacity Utilization:	17.4%
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)	217	0	0	0	0	160
Future Volume (vph)	217	0	0	0	0	160
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					1792
Flt Permitted	0.95					1.00
Satd. Flow (perm)	1787					1792
Peak-hour factor, PHF	0.95	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	0	0	0	0	174
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	228	0	0	0	0	174
Heavy Vehicles (%)	1%	0%	0%	0%	0%	6%
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					746
v/s Ratio Prot	c0.13					c0.10
v/s Ratio Perm						
v/c Ratio	0.31					0.23
Uniform Delay, d1	11.7					11.3
Progression Factor	1.00					0.11
Incremental Delay, d2	1.1					0.7
Delay (s)	12.8					2.0
Level of Service	B					A
Approach Delay (s/veh)	12.8		0.0		2.0	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	17.4%	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	69	0	0	221
Future Volume (vph)	0	0	69	0	0	221
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	1596
Fl _t Permitted			0.950			
Satd. Flow (perm)	0	0	1752	0	0	1596
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%	3%
Adj. Flow (vph)	0	0	75	0	0	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	75	0	0	240
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	26.4%
	ICU Level of Service A
Analysis Period (min)	15



Movement	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	0	0	69	0	0	221
Future Volume (Veh/h)	0	0	69	0	0	221
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	75	0	0	240
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			240	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			240	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 %			90	100	100	
cM capacity (veh/h)			746	1091	1636	
Direction, Lane #	SE 1	NE 1				
Volume Total	75	240				
Volume Left	75	0				
Volume Right	0	0				
cSH	746	1700				
Volume to Capacity	0.10	0.14				
Queue Length 95th (ft)	8	0				
Control Delay (s/veh)	10.4	0.0				
Lane LOS	B					
Approach Delay (s/veh)	10.4	0.0				
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			26.4%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	70	253	87	161
Future Volume (vph)	70	253	87	161
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)	1315	1881	1810	1553
Flt Permitted				
Satd. Flow (perm)	1315	1881	1810	1553
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				175
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 (%)	25%	1%	5%	4%
Adj. Flow (vph)	76	275	95	175
Shared Lane Traffic (%)				
Lane Group Flow (vph)	76	275	95	175
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	0.14	0.35	0.13	0.23
Control Delay (s/veh)	11.8	12.0	11.4	3.1
Queue Delay	0.0	0.0	0.0	0.0

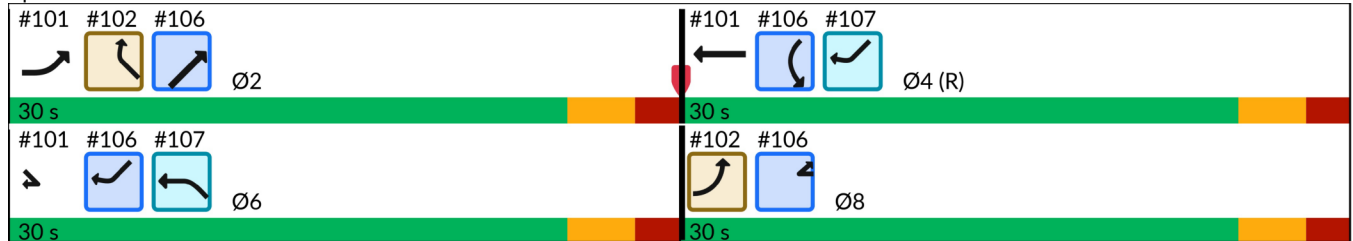


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.8	12.0	11.4	3.1
LOS	B	B	B	A
Approach Delay (s/veh)	12.0			
Approach LOS	B			
Queue Length 50th (ft)	16	67	20	0
Queue Length 95th (ft)	39	112	45	30
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	547	783	754	749
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.35	0.13	0.23

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:	0.35
Intersection Signal Delay (s/veh):	9.4
Intersection LOS:	A
Intersection Capacity Utilization:	26.0%
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)	70	253	87	161
Future Volume (vph)	70	253	87	161
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)	1315	1881	1810	1553
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1315	1881	1810	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	275	95	175
RTOR Reduction (vph)	0	0	0	102
Lane Group Flow (vph)	76	275	95	73
Heavy Vehicles (%)	25%	1%	5%	4%
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)	547	783	754	647
v/s Ratio Prot	c0.06	c0.15	0.05	0.05
v/s Ratio Perm				
v/c Ratio	0.14	0.35	0.13	0.11
Uniform Delay, d1	10.8	12.0	10.8	10.7
Progression Factor	1.00	0.88	1.00	1.00
Incremental Delay, d2	0.5	1.2	0.3	0.4
Delay (s)	11.4	11.7	11.1	11.1
Level of Service	B	B	B	B
Approach Delay (s/veh)		11.7		
Approach LOS		B		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	26.0%	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	80	0	0	87		
Future Volume (vph)	0	0	80	0	0	87		
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	1810		
Flt Permitted			0.950					
Satd. Flow (perm)	0	0	1770	0	0	1810		
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%	5%		
Adj. Flow (vph)	0	0	87	0	0	95		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	87	0	0	95		
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			0.12			0.13		
Control Delay (s/veh)			11.4			1.5		
Queue Delay			0.0			0.0		

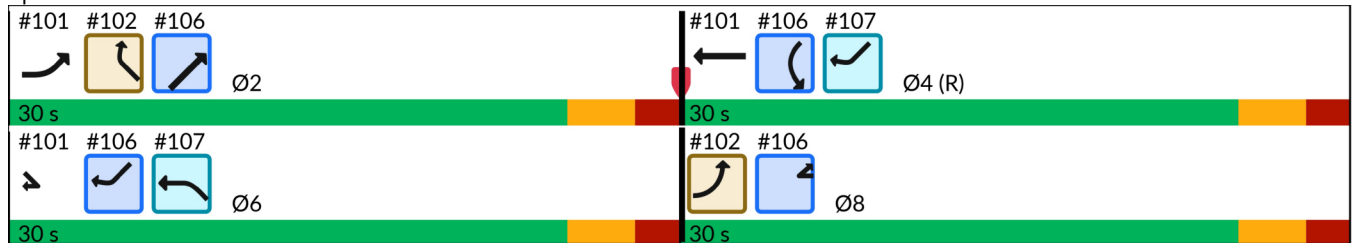


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			11.4			1.5		
LOS			B			A		
Approach Delay (s/veh)			11.4		1.5			
Approach LOS			B		A			
Queue Length 50th (ft)			18			1		
Queue Length 95th (ft)			42			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			737			754		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.12			0.13		

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:	0.35
Intersection Signal Delay (s/veh):	6.2
Intersection LOS:	A
Intersection Capacity Utilization:	21.0%
ICU Level of Service:	A
Analysis Period (min):	15

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

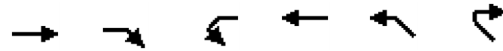


HCM Signalized Intersection Capacity Analysis
 107: NB PWP to WB Clover Hill

Manassas HEF EA
 09/16/2025

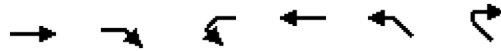


Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	80	0	0	87
Future Volume (vph)	0	0	80	0	0	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			1770			1810
Flt Permitted			0.95			1.00
Satd. Flow (perm)			1770			1810
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	87	0	0	95
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	87	0	0	95
Heavy Vehicles (%)	0%	0%	2%	0%	0%	5%
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			754
v/s Ratio Prot			c0.05			c0.05
v/s Ratio Perm						
v/c Ratio			0.12			0.13
Uniform Delay, d1			10.7			10.8
Progression Factor			1.00			0.11
Incremental Delay, d2			0.3			0.3
Delay (s)			11.1			1.5
Level of Service			B			A
Approach Delay (s/veh)	0.0		11.1		1.5	
Approach LOS	A		B		A	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			6.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.12			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			21.0%		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	161	124	0
Future Volume (vph)	0	0	0	161	124	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	1827	1671	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1827	1671	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%	4%	8%	0%
Adj. Flow (vph)	0	0	0	175	135	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	175	135	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	32.6% 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	161	124	0
Future Volume (Veh/h)	0	0	0	161	124	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	175	135	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	175	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	175	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	83	100	
cM capacity (veh/h)			1636	801	1091	
Direction, Lane #	WB 1	NW 1				
Volume Total	175	135				
Volume Left	0	135				
Volume Right	0	0				
cSH	1700	801				
Volume to Capacity	0.10	0.17				
Queue Length 95th (ft)	0	15				
Control Delay (s/veh)	0.0	10.4				
Lane LOS			B			
Approach Delay (s/veh)	0.0	10.4				
Approach LOS			B			
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			32.6%	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)	53	1	1	1	3	60
Future Volume (vph)	53	1	1	1	3	60
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)	58	1	1	1	3	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	59	1	1	3	65
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	19.7%
Analysis Period (min)	15
	ICU Level of Service A

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

Manassas HEF EA
 09/16/2025



















Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (veh/h)	53	1	1	1	3	60
Future Volume (Veh/h)	53	1	1	1	3	60
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)	58	1	1	1	3	65
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 %	94	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	59	1	1	3	65	
Volume Left	58	0	0	3	0	
Volume Right	0	0	1	0	65	
cSH	1013	892	1091	1636	1700	
Volume to Capacity	0.06	0.00*	0.00*	0.00*	0.04	
Queue Length 95th (ft)	5	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			19.7%	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)	6	3	1	14	4	39	1	7	11	29	6	1
Future Volume (vph)	6	3	1	14	4	39	1	7	11	29	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
Fr _t		0.988			0.907			0.923			0.997	
Fl _t Protected		0.969			0.988			0.998			0.962	
Satd. Flow (prot)	0	1819	0	0	1703	0	0	1750	0	0	1822	0
Fl _t Permitted		0.969			0.988			0.998			0.962	
Satd. Flow (perm)	0	1819	0	0	1703	0	0	1750	0	0	1822	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)	7	3	1	15	4	42	1	8	12	32	7	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	61	0	0	21	0	0	40	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	18.7%
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)	6	3	1	14	4	39	1	7	11	29	6	1
Future Volume (Veh/h)	6	3	1	14	4	39	1	7	11	29	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)	7	3	1	15	4	42	1	8	12	32	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	90	94	8	90	88	14	8			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	90	94	8	90	88	14	8			20		
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	99	96	100			98		
cM capacity (veh/h)	848	784	1081	882	789	1072	1625			1609		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	11	61	21	40								
Volume Left	7	15	1	32								
Volume Right	1	42	12	1								
cSH	846	996	1625	1609								
Volume to Capacity	0.01	0.06	0.00*	0.02								
Queue Length 95th (ft)	1	5	0	2								
Control Delay (s/veh)	9.3	8.9	0.3	5.9								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	9.3	8.9	0.3	5.9								
Approach LOS	A	A										
Intersection Summary												
Average Delay			6.6									
Intersection Capacity Utilization			18.7%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	3	1	14	4	39	1	7	11	29	6	1
Future Vol, veh/h	6	3	1	14	4	39	1	7	11	29	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	0	0	0	0	0	0	0
Mvmt Flow	7	3	1	15	4	42	1	8	12	32	7	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	90	94	8	90	88	14	8	0	0	20	0	0
Stage 1	72	72	-	16	16	-	-	-	-	-	-	-
Stage 2	18	22	-	74	72	-	-	-	-	-	-	-
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	900	800	1080	900	806	1072	1625	-	-	1609	-	-
Stage 1	943	839	-	1009	886	-	-	-	-	-	-	-
Stage 2	1006	881	-	940	839	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	847	783	1080	882	789	1072	1625	-	-	1609	-	-
Mov Cap-2 Maneuver	847	783	-	882	789	-	-	-	-	-	-	-
Stage 1	942	822	-	1008	885	-	-	-	-	-	-	-
Stage 2	961	880	-	917	822	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	9.3		7.4		0.4		5.9	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1625	-	-	845	1567	1609	-	-
HCM Lane V/C Ratio	0.001	-	-	0.013	0.04	0.02	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	9.3	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)	7	1	0	13	21	0
Future Volume (vph)	7	1	0	13	21	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)	8	1	0	14	23	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	1	0	14	23	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)	7	1	0	13	21	0
Future Volume (Veh/h)	7	1	0	13	21	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)	8	1	0	14	23	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	37	23	23			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	37	23	23			
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)	981	1060	1605			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	8	1	14	23		
Volume Left	8	0	0	0		
Volume Right	0	1	0	0		
cSH	981	1060	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)	8.7		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	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑	↑	
Traffic Vol, veh/h	7	1	0	13	21	0
Future Vol, veh/h	7	1	0	13	21	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	8	1	0	14	23	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	37	23	-	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	14	-	-	-	-	-
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	981	1060	0	-	-	0
Stage 1	1005	-	0	-	-	0
Stage 2	1014	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	981	1060	-	-	-	-
Mov Cap-2 Maneuver	981	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	1014	-	-	-	-	-

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)	-	981	1060	-
HCM Lane V/C Ratio	-	0.008	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)	10	1	10	42	35	17
Future Volume (vph)	10	1	10	42	35	17
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	0.989					0.850
Flt Protected	0.956			0.990		
Satd. Flow (prot)	1796	0	0	1881	1900	1615
Flt Permitted	0.956			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)	11	1	11	46	38	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	57	38	18
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	19.4%			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)	10	1	10	42	35	17
Future Volume (Veh/h)	10	1	10	42	35	17
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	1	11	46	38	18
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	106	38	56			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	106	38	56			
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)	890	1040	1562			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	12	57	38	18		
Volume Left	11	11	0	0		
Volume Right	1	0	0	18		
cSH	901	1562	1700	1700		
Volume to Capacity	0.01	0.00*	0.02	0.01		
Queue Length 95th (ft)	1	1	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			19.4%	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	10	1	10	42	35	17
Future Vol, veh/h	10	1	10	42	35	17
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	11	1	11	46	38	18

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	106	38	56	0	0
Stage 1	38	-	-	-	-
Stage 2	68	-	-	-	-
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	897	1040	1562	-	-
Stage 1	990	-	-	-	-
Stage 2	960	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	891	1040	1562	-	-
Mov Cap-2 Maneuver	891	-	-	-	-
Stage 1	983	-	-	-	-
Stage 2	960	-	-	-	-

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)	1562	-	903	-	-
HCM Lane V/C Ratio	0.007	-	0.013	-	-
HCM Ctrl Dly (s/v)	7.3	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	21	31	25	29	10
Future Volume (vph)	11	21	31	25	29	10
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)	12	23	34	27	32	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	23	34	27	43	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	18.4%			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)	11	21	31	25	29	10
Future Volume (Veh/h)	11	21	31	25	29	10
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)	12	23	34	27	32	11
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	133	38	43			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	133	38	43			
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)	818	1040	1579			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total	12	23	34	27	43	
Volume Left	12	0	34	0	0	
Volume Right	0	23	0	0	11	
cSH	818	1040	1579	1700	1700	
Volume to Capacity	0.01	0.02	0.02	0.02	0.03	
Queue Length 95th (ft)	1	2	2	0	0	
Control Delay (s/veh)	9.5	8.5	7.3	0.0	0.0	
Lane LOS	A	A	A			
Approach Delay (s/veh)	8.9		4.1		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			18.4%	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	11	21	31	25	29	10
Future Vol, veh/h	11	21	31	25	29	10
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	12	23	34	27	32	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	133	38	43	0	0
Stage 1	38	-	-	-	-
Stage 2	95	-	-	-	-
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	835	1040	1579	-	-
Stage 1	957	-	-	-	-
Stage 2	902	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	817	1040	1579	-	-
Mov Cap-2 Maneuver	817	-	-	-	-
Stage 1	936	-	-	-	-
Stage 2	902	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	8.8	4.1	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1579	-	817	1040	-	-
HCM Lane V/C Ratio	0.021	-	0.015	0.022	-	-
HCM Ctrl Dly (s/v)	7.3	-	9.5	8.5	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q (veh)	0.1	-	0	0.1	-	-

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	36	6	6	25	6
Future Volume (vph)	3	36	6	6	25	6
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					0.962
Satd. Flow (prot)	1656	0	1771	0	0	1745
Flt Permitted	0.996					0.962
Satd. Flow (perm)	1656	0	1771	0	0	1745
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	39	7	7	27	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	0	14	0	0	34
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	18.4%		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	36	6	6	25	6
Future Volume (Veh/h)	3	36	6	6	25	6
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	39	7	7	27	7
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	72	11			14	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72	11			14	
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	96			98	
cM capacity (veh/h)	922	1077			1578	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	42	14	34			
Volume Left	3	0	27			
Volume Right	39	7	0			
cSH	1064	1700	1578			
Volume to Capacity	0.04	0.00*	0.02			
Queue Length 95th (ft)	3	0	1			
Control Delay (s/veh)	8.5	0.0	5.8			
Lane LOS	A		A			
Approach Delay (s/veh)	8.5	0.0	5.8			
Approach LOS	A					
Intersection Summary						
Average Delay			6.2			
Intersection Capacity Utilization			18.4%	ICU Level of Service	A	
Analysis Period (min)			15			

* Value less than 0.01.

Intersection						
Int Delay, s/veh	6.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	36	6	6	25	6
Future Vol, veh/h	3	36	6	6	25	6
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	39	7	7	27	7










Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	72	11	0	0	14	0
Stage 1	11	-	-	-	-	-
Stage 2	61	-	-	-	-	-
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	937	1076	-	-	1578	-
Stage 1	1017	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	921	1076	-	-	1578	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	1017	-	-	-	-	-
Stage 2	951	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.5	0	5.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1062	1578
HCM Lane V/C Ratio	-	-	0.04	0.017
HCM Ctrl Dly (s/v)	-	-	8.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.1	0.1










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	52	0	0	52
Future Volume (vph)	0	0	52	0	0	52
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	57	0	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	57	0	0	57
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	52	0	0	52
Future Volume (Veh/h)	0	0	52	0	0	52
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	57	0	0	57
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	114	57			57	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114	57			57	
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)	887	1015			1560	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	57	57			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1560			
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	52	0	0	52
Future Vol, veh/h	0	0	52	0	0	52
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	57	0	0	57

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	114	57	0	0	57
Stage 1	57	-	-	-	-
Stage 2	57	-	-	-	-
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	887	1015	-	-	1560
Stage 1	971	-	-	-	-
Stage 2	971	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	887	1015	-	-	1560
Mov Cap-2 Maneuver	887	-	-	-	-
Stage 1	971	-	-	-	-
Stage 2	971	-	-	-	-

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)	-	-	1560	-
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	-
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0	-

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	52	0	0	52
Future Volume (vph)	0	0	52	0	0	52
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	57	0	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	57	0	0	57
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	52	0	0	52
Future Volume (Veh/h)	0	0	52	0	0	52
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	57	0	0	57
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	114	57			57	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114	57			57	
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)	887	1015			1560	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	57	57			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1560			
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	TT		TT			TT
Traffic Vol, veh/h	0	0	52	0	0	52
Future Vol, veh/h	0	0	52	0	0	52
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	57	0	0	57

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	114	57	0	0	57
Stage 1	57	-	-	-	-
Stage 2	57	-	-	-	-
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	887	1015	-	-	1560
Stage 1	971	-	-	-	-
Stage 2	971	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	887	1015	-	-	1560
Mov Cap-2 Maneuver	887	-	-	-	-
Stage 1	971	-	-	-	-
Stage 2	971	-	-	-	-

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)	-	-	-	1560
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	50	52	0	1	4
Future Volume (vph)	0	50	52	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	54	57	0	1	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	54	57	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	50	52	0	1	4
Future Volume (Veh/h)	0	50	52	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	54	57	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	57				111	57
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	57				111	57
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)	1560				891	1015
Direction, Lane #						
	SE 1	NW 1	SW 1			
Volume Total	54	57	5			
Volume Left	0	0	1			
Volume Right	0	0	4			
cSH	1560	1700	987			
Volume to Capacity	0.00	0.03	0.00*			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	8.7			
Lane LOS			A			
Approach Delay (s/veh)	0.0	0.0	8.7			
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	50	52	0	1	4
Future Vol, veh/h	0	50	52	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	54	57	0	1	4




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	57	0	-	0	111 57
Stage 1	-	-	-	-	57 -
Stage 2	-	-	-	-	54 -
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	1560	-	-	-	891 1015
Stage 1	-	-	-	-	971 -
Stage 2	-	-	-	-	974 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1560	-	-	-	891 1015
Mov Cap-2 Maneuver	-	-	-	-	891 -
Stage 1	-	-	-	-	971 -
Stage 2	-	-	-	-	974 -

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1560	- 988
HCM Lane V/C Ratio	-	-	-	- 0.006
HCM Ctrl Dly (s/v)	-	-	0	- 8.7
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)	24	21	0	6	18	28	0	3	0	43	0	24
Future Volume (vph)	24	21	0	6	18	28	0	3	0	43	0	24
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					0.910							0.850
Flt Protected	0.950			0.950								0.950
Satd. Flow (prot)	1805	3610	0	1805	3183	0	0	1900	0	0	1805	1615
Flt Permitted	0.950			0.950								0.950
Satd. Flow (perm)	1805	3610	0	1805	3183	0	0	1900	0	0	1805	1615
Link Speed (mph)		35			35			25				25
Link Distance (ft)		1357			2771			405				407
Travel Time (s)		26.4			54.0			11.0				11.1
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)	26	23	0	7	20	30	0	3	0	47	0	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	23	0	7	50	0	0	3	0	0	47	26
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	23.7%						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)	24	21	0	6	18	28	0	3	0	43	0	24
Future Volume (Veh/h)	24	21	0	6	18	28	0	3	0	43	0	24
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)	26	23	0	7	20	30	0	3	0	47	0	26
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	50			23			112	139	12	114	124	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50			23			112	139	12	114	124	25
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	94	100	98
cM capacity (veh/h)	1570			1605			825	740	1073	841	754	1052
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	26	15	8	7	13	37	3	73				
Volume Left	26	0	0	7	0	0	0	47				
Volume Right	0	0	0	0	0	30	0	26				
cSH	1570	1700	1700	1605	1700	1700	740	1306				
Volume to Capacity	0.02	0.00*	0.00*	0.00*	0.00*	0.02	0.00*	0.06				
Queue Length 95th (ft)	1	0	0	0	0	0	0	4				
Control Delay (s/veh)	7.3	0.0	0.0	7.3	0.0	0.0	9.9	9.2				
Lane LOS	A			A			A	A				
Approach Delay (s/veh)	3.9			0.9			9.9	9.2				
Approach LOS							A	A				
Intersection Summary												
Average Delay			5.2									
Intersection Capacity Utilization			23.7%		ICU Level of Service			A				
Analysis Period (min)			15									

* Value less than 0.01.

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕			↕	↗
Traffic Vol, veh/h	24	21	0	6	18	28	0	3	0	43	0	24
Future Vol, veh/h	24	21	0	6	18	28	0	3	0	43	0	24
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	26	23	0	7	20	30	0	3	0	47	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	50	0	0	23	0	0	99	139	12	114	124	25
Stage 1	-	-	-	-	-	-	75	75	-	49	49	-
Stage 2	-	-	-	-	-	-	24	64	-	65	75	-
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	1570	-	-	1605	-	-	878	756	1072	857	770	1052
Stage 1	-	-	-	-	-	-	931	836	-	964	858	-
Stage 2	-	-	-	-	-	-	996	846	-	944	836	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1570	-	-	1605	-	-	843	740	1072	841	754	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	843	740	-	841	754	-
Stage 1	-	-	-	-	-	-	915	822	-	948	855	-
Stage 2	-	-	-	-	-	-	967	843	-	925	822	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	3.9			0.8			9.9			9.1		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	740	1570	-	-	1605	-	-	841	1052
HCM Lane V/C Ratio	0.004	0.017	-	-	0.004	-	-	0.056	0.025
HCM Ctrl Dly (s/v)	9.9	7.3	-	-	7.3	-	-	9.5	8.5
HCM Lane LOS	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q (veh)	0	0.1	-	-	0	-	-	0.2	0.1



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	23	31	34	29	
Future Volume (vph)	23	31	34	29	
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)	25	34	37	32	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	25	34	37	32	
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	0.05	0.05	
Control Delay (s/veh)	10.6	0.0	8.3	10.7	
Queue Delay	0.0	0.0	0.0	0.0	

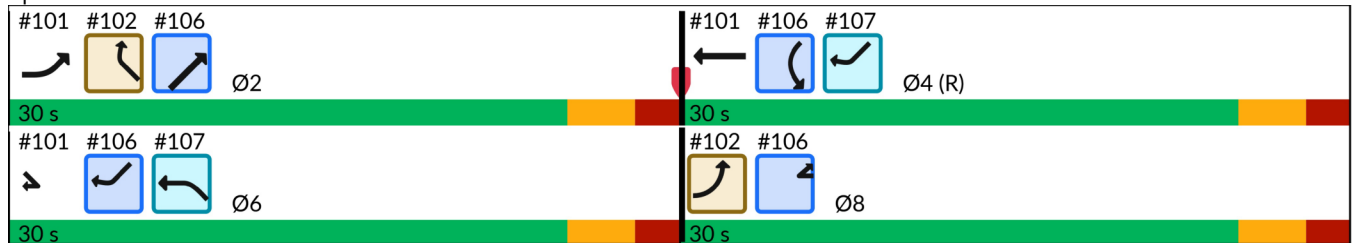


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	10.6	0.0	8.3	10.7	
LOS	B	A	A	B	
Approach Delay (s/veh)			8.3		
Approach LOS			A		
Queue Length 50th (ft)	5	0	6	7	
Queue Length 95th (ft)	17	0	17	20	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	791	1615	791	685	
Starvation 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	0.05	0.05	

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:	0.29
Intersection Signal Delay (s/veh):	7.1
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)	23	31	34	29
Future Volume (vph)	23	31	34	29
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)	25	34	37	32
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	25	34	37	32
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	0.05	0.05
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)	7.0	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	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)	174	0	0	0	0	23		
Future Volume (vph)	174	0	0	0	0	23		
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)	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)	189	0	0	0	0	25		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	189	0	0	0	0	25		
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	0.25					0.03		
Control Delay (s/veh)	12.6					1.5		
Queue Delay	0.0					0.0		

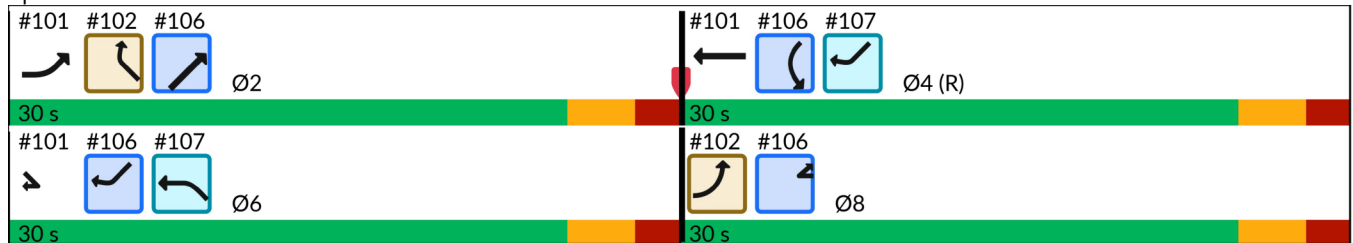


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	12.6							1.5
LOS	B							A
Approach Delay (s/veh)	12.6				1.5			
Approach LOS	B				A			
Queue Length 50th (ft)	43							1
Queue Length 95th (ft)	81							1
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	752							791
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.25							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:	0.29
Intersection Signal Delay (s/veh):	11.3
Intersection LOS:	B
Intersection Capacity Utilization:	14.3%
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)	174	0	0	0	0	23
Future Volume (vph)	174	0	0	0	0	23
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)	189	0	0	0	0	25
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	189	0	0	0	0	25
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	c0.10					c0.01
v/s Ratio Perm						
v/c Ratio	0.25					0.03
Uniform Delay, d1	11.4					10.3
Progression Factor	1.00					0.14
Incremental Delay, d2	0.8					0.1
Delay (s)	12.2					1.5
Level of Service	B					A
Approach Delay (s/veh)	12.2		0.0		1.5	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	14.3%	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	49	0	0	31
Future Volume (vph)	0	0	49	0	0	31
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	53	0	0	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	53	0	0	34
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	49	0	0	31
Future Volume (Veh/h)	0	0	49	0	0	31
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	53	0	0	34
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			34	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			34	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)			984	1091	1636	
Direction, Lane #	SE 1	NE 1				
Volume Total	53	34				
Volume Left	53	0				
Volume Right	0	0				
cSH	984	1700				
Volume to Capacity	0.05	0.02				
Queue Length 95th (ft)	4	0				
Control Delay (s/veh)	8.9	0.0				
Lane LOS	A					
Approach Delay (s/veh)	8.9	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)	59	182	59	214
Future Volume (vph)	59	182	59	214
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)	1494	1900	1900	1583
Flt Permitted				
Satd. Flow (perm)	1494	1900	1900	1583
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				233
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 (%)	10%	0%	0%	2%
Adj. Flow (vph)	64	198	64	233
Shared Lane Traffic (%)				
Lane Group Flow (vph)	64	198	64	233
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	0.10	0.25	0.08	0.29
Control Delay (s/veh)	11.3	14.4	11.0	3.0
Queue Delay	0.0	0.0	0.0	0.0

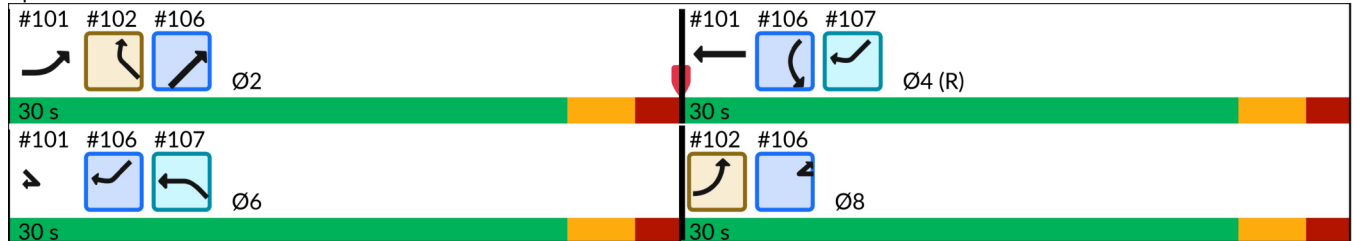


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.3	14.4	11.0	3.0
LOS	B	B	B	A
Approach Delay (s/veh)	14.4			
Approach LOS	B			
Queue Length 50th (ft)	13	65	13	0
Queue Length 95th (ft)	33	119	33	34
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	622	791	791	795
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.25	0.08	0.29

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:	0.29
Intersection Signal Delay (s/veh):	8.9
Intersection LOS:	A
Intersection Capacity Utilization:	22.1%
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)	59	182	59	214
Future Volume (vph)	59	182	59	214
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)	1494	1900	1900	1583
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1494	1900	1900	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	198	64	233
RTOR Reduction (vph)	0	0	0	136
Lane Group Flow (vph)	64	198	64	97
Heavy Vehicles (%)	10%	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)	622	791	791	659
v/s Ratio Prot	c0.04	c0.10	0.03	0.06
v/s Ratio Perm				
v/c Ratio	0.10	0.25	0.08	0.15
Uniform Delay, d1	10.7	11.4	10.6	10.9
Progression Factor	1.00	1.16	1.00	1.00
Incremental Delay, d2	0.3	0.7	0.2	0.5
Delay (s)	11.0	14.0	10.8	11.3
Level of Service	B	B	B	B
Approach Delay (s/veh)		14.0		
Approach LOS		B		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	22.1%	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	24	0	0	59		
Future Volume (vph)	0	0	24	0	0	59		
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	26	0	0	64		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	26	0	0	64		
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			0.08		
Control Delay (s/veh)			10.6			1.4		
Queue Delay			0.0			0.0		

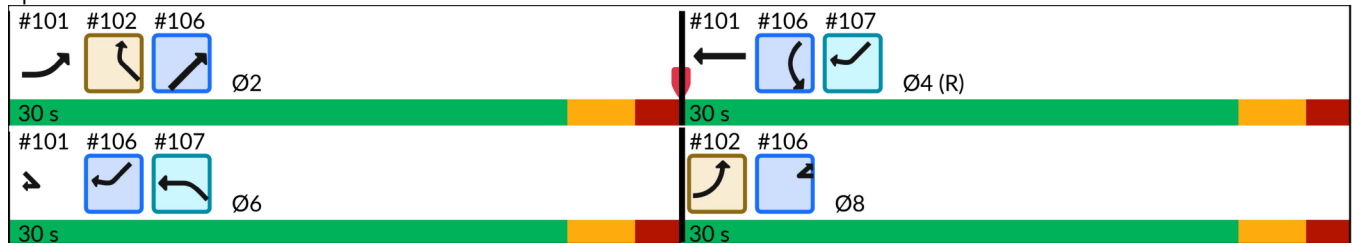


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			10.6			1.4		
LOS			B			A		
Approach Delay (s/veh)			10.6		1.4			
Approach LOS			B		A			
Queue Length 50th (ft)			5			1		
Queue Length 95th (ft)			17			2		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			752			791		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.03			0.08		

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:	0.29
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



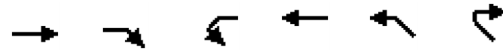
HCM Signalized Intersection Capacity Analysis
 107: NB PWP to WB Clover Hill

Manassas HEF EA
 09/16/2025



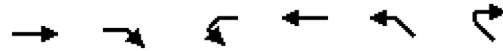
Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	24	0	0	59
Future Volume (vph)	0	0	24	0	0	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			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	26	0	0	64
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	26	0	0	64
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			0.08
Uniform Delay, d1			10.4			10.6
Progression Factor			1.00			0.11
Incremental Delay, d2			0.1			0.2
Delay (s)			10.4			1.4
Level of Service			B			A
Approach Delay (s/veh)	0.0		10.4		1.4	
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			0.06			
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	214	15	0
Future Volume (vph)	0	0	0	214	15	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr						
Flt Protected					0.950	
Satd. Flow (prot)	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	233	16	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	233	16	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	35.4%
	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	214	15	0
Future Volume (Veh/h)	0	0	0	214	15	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	233	16	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	233	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	233	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	760	1091	
Direction, Lane #	WB 1	NW 1				
Volume Total	233	16				
Volume Left	0	16				
Volume Right	0	0				
cSH	1700	760				
Volume to Capacity	0.14	0.02				
Queue Length 95th (ft)	0	2				
Control Delay (s/veh)	0.0	9.8				
Lane LOS			A			
Approach Delay (s/veh)	0.0	9.8				
Approach LOS			A			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			35.4%	ICU Level of Service		A
Analysis Period (min)			15			