














Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (vph)	291	4	0	27	63	567
Future Volume (vph)	291	4	0	27	63	567
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 <sub>t</sub>				0.850		0.850
Fl <sub>t</sub> Protected		0.953			0.950	
Satd. Flow (prot)	0	1550	1900	1615	1805	1568
Fl <sub>t</sub> Permitted		0.953			0.950	
Satd. Flow (perm)	0	1550	1900	1615	1805	1568
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 (%)	17%	0%	0%	0%	0%	3%
Adj. Flow (vph)	316	4	0	29	68	616
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	320	0	29	68	616
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	38.4%
	ICU Level of Service A
Analysis Period (min)	15

















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

Manasses HEF EA  
 10/12/2025

						
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	291	4	0	27	63	567
Future Volume (Veh/h)	291	4	0	27	63	567
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)	316	4	0	29	68	616
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	921					
pX, platoon unblocked						
vC, conflicting volume	136	136	136	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	136	136	136	0	0	
tC, single (s)	7.3	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.7	4.0	4.0	3.3	2.2	
p0 queue free %	58	99	100	97	96	
cM capacity (veh/h)	756	727	727	1091	1636	
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NW 1</b>	<b>NW 2</b>	<b>SW 1</b>	<b>SW 2</b>	
Volume Total	320	0	29	68	616	
Volume Left	316	0	0	68	0	
Volume Right	0	0	29	0	616	
cSH	755	1700	1091	1636	1700	
Volume to Capacity	0.42	0.00	0.03	0.04	0.36	
Queue Length 95th (ft)	53	0	2	3	0	
Control Delay (s/veh)	13.2	0.0	8.4	7.3	0.0	
Lane LOS	B	A	A	A		
Approach Delay (s/veh)	13.2	8.4		0.7		
Approach LOS	B	A				
<b>Intersection Summary</b>						
Average Delay			4.8			
Intersection Capacity Utilization			38.4%	ICU Level of Service	A	
Analysis Period (min)			15			

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

Manassas HEF EA  
 10/12/2025

















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	1	14	40	278	4	30	108	51	6	1
Future Volume (vph)	1	0	1	14	40	278	4	30	108	51	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.932			0.887			0.897			0.998	
Fl <sub>t</sub> Protected		0.976			0.998			0.999			0.958	
Satd. Flow (prot)	0	1728	0	0	1668	0	0	1623	0	0	1783	0
Fl <sub>t</sub> Permitted		0.976			0.998			0.999			0.958	
Satd. Flow (perm)	0	1728	0	0	1668	0	0	1623	0	0	1783	0
Link Speed (mph)		20			35			35			35	
Link Distance (ft)		296			4575			313			332	
Travel Time (s)		10.1			89.1			6.1			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	23%	0%	0%	17%	0%
Adj. Flow (vph)	1	0	1	15	43	302	4	33	117	55	7	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	360	0	0	154	0	0	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.8%
ICU Level of Service	A
Analysis Period (min)	15

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

Manasses HEF EA  
 10/12/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	14	40	278	4	30	108	51	6	1
Future Volume (Veh/h)	1	0	1	14	40	278	4	30	108	51	6	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	1	15	43	302	4	33	117	55	7	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	239	276	8	218	218	92	8			150		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	239	276	8	218	218	92	8			150		
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	93	69	100			96		
cM capacity (veh/h)	456	610	1081	719	656	969	1625			1444		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	360	154	63								
Volume Left	1	15	4	55								
Volume Right	1	302	117	1								
cSH	642	904	1625	1444								
Volume to Capacity	0.00*	0.40	0.00*	0.04								
Queue Length 95th (ft)	0	48	0	3								
Control Delay (s/veh)	10.6	11.6	0.2	6.7								
Lane LOS	B	B	A	A								
Approach Delay (s/veh)	10.6	11.6	0.2	6.7								
Approach LOS	B	B										
Intersection Summary												
Average Delay			8.0									
Intersection Capacity Utilization			41.8%		ICU Level of Service				A			
Analysis Period (min)			15									

\* Value less than 0.01.

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	14	40	278	4	30	108	51	6	1
Future Vol, veh/h	1	0	1	14	40	278	4	30	108	51	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	1	0	23	0	0	17	0
Mvmt Flow	1	0	1	15	43	302	4	33	117	55	7	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	239	276	8	218	218	92	8	0	0	150	0	0
Stage 1	118	118	-	100	100	-	-	-	-	-	-	-
Stage 2	121	158	-	118	118	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	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	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	719	635	1080	743	684	968	1625	-	-	1444	-	-
Stage 1	891	802	-	911	816	-	-	-	-	-	-	-
Stage 2	888	771	-	891	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	455	609	1080	719	656	968	1625	-	-	1444	-	-
Mov Cap-2 Maneuver	455	609	-	719	656	-	-	-	-	-	-	-
Stage 1	888	772	-	908	814	-	-	-	-	-	-	-
Stage 2	576	769	-	856	772	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	10.6		9.5		0.2		6.7	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1625	-	-	640	1156	1444	-	-
HCM Lane V/C Ratio	0.003	-	-	0.003	0.312	0.038	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	10.6	9.5	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	1.3	0.1	-	-

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

Manasses HEF EA  
10/12/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	136	1	0	6	22	0
Future Volume (vph)	136	1	0	6	22	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.850					
Fl <sub>t</sub> Protected	0.950					
Satd. Flow (prot)	1719	1615	0	1900	1810	0
Fl <sub>t</sub> Permitted	0.950					
Satd. Flow (perm)	1719	1615	0	1900	1810	0
Link Speed (mph)	20			35	35	
Link Distance (ft)	207			735	313	
Travel Time (s)	7.1			14.3	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	0%	0%	0%	5%	0%
Adj. Flow (vph)	148	1	0	7	24	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	1	0	7	24	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.5%
Analysis Period (min)	15
	ICU Level of Service A

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

Manasses HEF EA  
10/12/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	136	1	0	6	22	0
Future Volume (Veh/h)	136	1	0	6	22	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	148	1	0	7	24	0
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	31	24	24			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	31	24	24			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	100	100			
cM capacity (veh/h)	975	1058	1604			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>SB 1</b>		
Volume Total	148	1	7	24		
Volume Left	148	0	0	0		
Volume Right	0	1	0	0		
cSH	975	1058	1700	1700		
Volume to Capacity	0.15	0.00*	0.00*	0.01		
Queue Length 95th (ft)	13	0	0	0		
Control Delay (s/veh)	9.3	8.4	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	9.3		0.0	0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	7.7					
Intersection Capacity Utilization	17.5%			ICU Level of Service	A	
Analysis Period (min)	15					

\* Value less than 0.01.

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	136	1	0	6	22	0
Future Vol, veh/h	136	1	0	6	22	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	0	0	0	5	0
Mvmt Flow	148	1	0	7	24	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	31	24	-	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.45	6.2	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	-	-	-	-
Pot Cap-1 Maneuver	975	1058	0	-	-	0
Stage 1	991	-	0	-	-	0
Stage 2	1008	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	975	1058	-	-	-	-
Mov Cap-2 Maneuver	975	-	-	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	1008	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	975	1058	-
HCM Lane V/C Ratio	-	0.152	0.001	-
HCM Ctrl Dly (s/v)	-	9.4	8.4	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q (veh)	-	0.5	0	-

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

Manasses HEF EA  
10/12/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕	↕	↗
Traffic Volume (vph)	0	0	172	137	58	41
Future Volume (vph)	0	0	172	137	58	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			165
Storage Lanes	0	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.850
Fl <sub>t</sub> Protected				0.973		
Satd. Flow (prot)	0	0	0	1783	1863	1442
Fl <sub>t</sub> Permitted				0.973		
Satd. Flow (perm)	0	0	0	1783	1863	1442
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 (%)	0%	0%	1%	7%	2%	12%
Adj. Flow (vph)	0	0	187	149	62	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	336	62	45
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			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	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.7%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕	↕	↗
Traffic Volume (veh/h)	0	0	172	137	58	41
Future Volume (Veh/h)	0	0	172	137	58	41
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)	0	0	187	149	62	45
<b>Pedestrians</b>						
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	585	62	107			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	585	62	107			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	87			
cM capacity (veh/h)	417	1009	1490			
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>SB 1</b>	<b>SB 2</b>			
Volume Total	336	62	45			
Volume Left	187	0	0			
Volume Right	0	0	45			
cSH	1490	1700	1700			
Volume to Capacity	0.13	0.04	0.03			
Queue Length 95th (ft)	11	0	0			
Control Delay (s/veh)	4.8	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	4.8	0.0				
Approach LOS						
<b>Intersection Summary</b>						
Average Delay			3.6			
Intersection Capacity Utilization			26.7%	ICU Level of Service	A	
Analysis Period (min)			15			

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



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	67	44	63	66	39
Future Volume (vph)	42	67	44	63	66	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0	145			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.950	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1612	1615	1770	1810	1731	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1612	1615	1770	1810	1731	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%	2%	5%	5%	3%
Adj. Flow (vph)	46	73	48	68	72	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	73	48	68	114	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	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.1%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
10/12/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	67	44	63	66	39
Future Volume (Veh/h)	42	67	44	63	66	39
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	73	48	68	72	42
<b>Pedestrians</b>						
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	257	93	114			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	257	93	114			
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	92	97			
cM capacity (veh/h)	687	970	1475			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	
Volume Total	46	73	48	68	114	
Volume Left	46	0	48	0	0	
Volume Right	0	73	0	0	42	
cSH	687	970	1475	1700	1700	
Volume to Capacity	0.07	0.08	0.03	0.04	0.07	
Queue Length 95th (ft)	5	6	3	0	0	
Control Delay (s/veh)	10.6	9.0	7.5	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	9.6		3.1		0.0	
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.3			
Intersection Capacity Utilization			19.1%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	4.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	42	67	44	63	66	39
Future Vol, veh/h	42	67	44	63	66	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	105	0	145	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	12	0	2	5	5	3
Mvmt Flow	46	73	48	68	72	42

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	257	93	114	0	0
Stage 1	93	-	-	-	-
Stage 2	164	-	-	-	-
Critical Hdwy	6.52	6.2	4.12	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-
Follow-up Hdwy	3.608	3.3	2.218	-	-
Pot Cap-1 Maneuver	711	970	1475	-	-
Stage 1	906	-	-	-	-
Stage 2	841	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	688	970	1475	-	-
Mov Cap-2 Maneuver	688	-	-	-	-
Stage 1	876	-	-	-	-
Stage 2	841	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.6	3.1	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1475	-	688	970	-	-
HCM Lane V/C Ratio	0.032	-	0.066	0.075	-	-
HCM Ctrl Dly (s/v)	7.5	-	10.6	9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.1	-	0.2	0.2	-	-

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	45	25	25	86	25
Future Volume (vph)	13	45	25	25	86	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.895		0.932			
Flt Protected	0.989					0.963
Satd. Flow (prot)	1682	0	1771	0	0	1736
Flt Permitted	0.989					0.963
Satd. Flow (perm)	1682	0	1771	0	0	1736
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%	7%	0%
Adj. Flow (vph)	14	49	27	27	93	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	54	0	0	120
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.9%		ICU Level of Service A			
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	45	25	25	86	25
Future Volume (Veh/h)	13	45	25	25	86	25
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	49	27	27	93	27
<b>Pedestrians</b>						
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	254	41			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254	41			54	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	98	95			94	
cM capacity (veh/h)	694	1036			1520	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	63	54	120			
Volume Left	14	0	93			
Volume Right	49	27	0			
cSH	934	1700	1520			
Volume to Capacity	0.07	0.03	0.06			
Queue Length 95th (ft)	5	0	5			
Control Delay (s/veh)	9.1	0.0	5.9			
Lane LOS	A		A			
Approach Delay (s/veh)	9.1	0.0	5.9			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.4			
Intersection Capacity Utilization			22.9%		ICU Level of Service	A
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	5.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	45	25	25	86	25
Future Vol, veh/h	13	45	25	25	86	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	-	-	-	-	-
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	7	0
Mvmt Flow	14	49	27	27	93	27

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	254	41	0	0	54
Stage 1	41	-	-	-	-
Stage 2	213	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.17
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.263
Pot Cap-1 Maneuver	739	1036	-	-	1520
Stage 1	987	-	-	-	-
Stage 2	827	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	693	1036	-	-	1520
Mov Cap-2 Maneuver	693	-	-	-	-
Stage 1	987	-	-	-	-
Stage 2	776	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.1	0	5.8
HCM LOS	A		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	933	1520
HCM Lane V/C Ratio	-	-	0.068	0.061
HCM Ctrl Dly (s/v)	-	-	9.1	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.2	0.2

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	124	13	0	95
Future Volume (vph)	4	0	124	13	0	95
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	0.987					
Flt Protected	0.950					
Satd. Flow (prot)	902	0	1760	0	0	1845
Flt Permitted	0.950					
Satd. Flow (perm)	902	0	1760	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 (%)	100%	0%	4%	31%	0%	3%
Adj. Flow (vph)	4	0	135	14	0	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	149	0	0	103
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		
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	17.3%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	0	124	13	0	95
Future Volume (Veh/h)	4	0	124	13	0	95
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)	4	0	135	14	0	103
<b>Pedestrians</b>						
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	245	142			149	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	245	142			149	
tC, single (s)	7.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	4.4	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	572	911			1445	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	4	149	103			
Volume Left	4	0	0			
Volume Right	0	14	0			
cSH	572	1700	1445			
Volume to Capacity	0.00*	0.09	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s/veh)	11.3	0.0	0.0			
Lane LOS	B					
Approach Delay (s/veh)	11.3	0.0	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			0.2			
Intersection Capacity Utilization			17.3%		ICU Level of Service	A
Analysis Period (min)			15			

\* Value less than 0.01.










Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	124	13	0	95
Future Vol, veh/h	4	0	124	13	0	95
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, %	100	0	4	31	0	3
Mvmt Flow	4	0	135	14	0	103

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	245	142	0	0	149
Stage 1	142	-	-	-	-
Stage 2	103	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	4.1
Critical Hdwy Stg 1	6.4	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	2.2
Pot Cap-1 Maneuver	572	911	-	-	1445
Stage 1	692	-	-	-	-
Stage 2	725	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	572	911	-	-	1445
Mov Cap-2 Maneuver	572	-	-	-	-
Stage 1	692	-	-	-	-
Stage 2	725	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.3	0	0
HCM LOS	B		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	572	1445
HCM Lane V/C Ratio	-	-	0.008	-
HCM Ctrl Dly (s/v)	-	-	11.3	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q (veh)	-	-	0	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	124	0	1	95
Future Volume (vph)	0	0	124	0	1	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1900	0	1827	0	0	1845
Flt Permitted						
Satd. Flow (perm)	1900	0	1827	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%	4%	0%	0%	3%
Adj. Flow (vph)	0	0	135	0	1	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	135	0	0	104
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
<b>Two way Left Turn Lane</b>						
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
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	9.9%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	124	0	1	95
Future Volume (Veh/h)	0	0	124	0	1	95
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	135	0	1	103
<b>Pedestrians</b>						
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	240	135			135	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	240	135			135	
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)	752	919			1462	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	135	104			
Volume Left	0	0	1			
Volume Right	0	0	0			
cSH	1700	1700	1462			
Volume to Capacity	0.00	0.08	0.00*			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.1			
Lane LOS	A		A			
Approach Delay (s/veh)	0.0	0.0	0.1			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			9.9%	ICU Level of Service	A	
Analysis Period (min)			15			

\* Value less than 0.01.

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	0	0	124	0	1	95
Future Vol, veh/h	0	0	124	0	1	95
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	4	0	0	3
Mvmt Flow	0	0	135	0	1	103

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	240	135	0	0	135
Stage 1	135	-	-	-	-
Stage 2	105	-	-	-	-
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	753	919	-	-	1462
Stage 1	896	-	-	-	-
Stage 2	924	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	752	919	-	-	1462
Mov Cap-2 Maneuver	752	-	-	-	-
Stage 1	896	-	-	-	-
Stage 2	923	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1462
HCM Lane V/C Ratio	-	-	-	0.001
HCM Ctrl Dly (s/v)	-	-	0	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	-	0



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	37	96	107	17	0	0
Future Volume (vph)	37	96	107	17	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			0.982			
Flt Protected		0.986				
Satd. Flow (prot)	0	1834	1788	0	1900	0
Flt Permitted		0.986				
Satd. Flow (perm)	0	1834	1788	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)	40	104	116	18	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	144	134	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	20.4%
ICU Level of Service	A
Analysis Period (min)	15

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

Manasses HEF EA  
 10/12/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕		↕	
Traffic Volume (veh/h)	37	96	107	17	0	0
Future Volume (Veh/h)	37	96	107	17	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)	40	104	116	18	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	134				309	125
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	134				309	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)	1463				669	931
Direction, Lane #	SE 1	NW 1	SW 1			
Volume Total	144	134	0			
Volume Left	40	0	0			
Volume Right	0	18	0			
cSH	1463	1700	1700			
Volume to Capacity	0.03	0.08	0.00			
Queue Length 95th (ft)	2	0	0			
Control Delay (s/veh)	2.2	0.0	0.0			
Lane LOS	A		A			
Approach Delay (s/veh)	2.2	0.0	0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			20.4%		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	37	96	107	17	0	0
Future Vol, veh/h	37	96	107	17	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	40	104	116	18	0	0




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	134	0	-	0	309 125
Stage 1	-	-	-	-	125 -
Stage 2	-	-	-	-	184 -
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	1463	-	-	-	687 931
Stage 1	-	-	-	-	906 -
Stage 2	-	-	-	-	852 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1463	-	-	-	667 931
Mov Cap-2 Maneuver	-	-	-	-	667 -
Stage 1	-	-	-	-	880 -
Stage 2	-	-	-	-	852 -

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)	-	-	1463	-
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

Manasses HEF EA  
10/12/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	22	3	1	81	37	0	0	3	14	0	58
Future Volume (vph)	22	22	3	1	81	37	0	0	3	14	0	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.953			0.865				0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1703	3207	0	1805	3322	0	0	1644	0	0	1656	1509
Flt Permitted	0.950			0.950							0.950	
Satd. Flow (perm)	1703	3207	0	1805	3322	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%	12%	0%	0%	2%	7%	0%	0%	0%	9%	0%	7%
Adj. Flow (vph)	24	24	3	1	88	40	0	0	3	15	0	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	27	0	1	128	0	0	3	0	0	15	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	22.0%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
 15: Gateway Blvd

Manasses HEF EA  
 10/12/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	22	3	1	81	37	0	0	3	14	0	58
Future Volume (Veh/h)	22	22	3	1	81	37	0	0	3	14	0	58
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	24	3	1	88	40	0	0	3	15	0	63
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	128			27			151	204	14	173	185	64
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	128			27			151	204	14	173	185	64
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.7	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.6	4.0	3.4
p0 queue free %	98			100			100	100	100	98	100	94
cM capacity (veh/h)	1427			1600			745	684	1070	743	701	971
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	24	16	11	1	59	69	3	78				
Volume Left	24	0	0	1	0	0	0	15				
Volume Right	0	0	3	0	0	40	3	63				
cSH	1427	1700	1700	1600	1700	1700	1070	1202				
Volume to Capacity	0.02	0.00*	0.00*	0.00*	0.03	0.04	0.00*	0.06				
Queue Length 95th (ft)	1	0	0	0	0	0	0	5				
Control Delay (s/veh)	7.6	0.0	0.0	7.3	0.0	0.0	8.4	9.2				
Lane LOS	A			A			A	A				
Approach Delay (s/veh)	3.6			0.1			8.4	9.2				
Approach LOS							A	A				
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			22.0%		ICU Level of Service			A				
Analysis Period (min)			15									

\* Value less than 0.01.

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕			↕	↗
Traffic Vol, veh/h	22	22	3	1	81	37	0	0	3	14	0	58
Future Vol, veh/h	22	22	3	1	81	37	0	0	3	14	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	12	0	0	2	7	0	0	0	9	0	7
Mvmt Flow	24	24	3	1	88	40	0	0	3	15	0	63

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	128	0	0	27	0	0	120	204	14	170	185	64
Stage 1	-	-	-	-	-	-	74	74	-	110	110	-
Stage 2	-	-	-	-	-	-	46	130	-	60	75	-
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	1427	-	-	1600	-	-	849	696	1069	759	713	971
Stage 1	-	-	-	-	-	-	933	837	-	863	808	-
Stage 2	-	-	-	-	-	-	968	792	-	924	836	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1427	-	-	1600	-	-	784	683	1069	747	700	971
Mov Cap-2 Maneuver	-	-	-	-	-	-	784	683	-	747	700	-
Stage 1	-	-	-	-	-	-	917	823	-	848	807	-
Stage 2	-	-	-	-	-	-	905	791	-	906	822	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	3.5	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	1427	-	-	1600	-	-	747	971
HCM Lane V/C Ratio	0.003	0.017	-	-	0.001	-	-	0.02	0.065
HCM Ctrl Dly (s/v)	8.4	7.6	-	-	7.3	-	-	9.9	9
HCM Lane LOS	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q (veh)	0	0.1	-	-	0	-	-	0.1	0.2



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	162	157	354	276	
Future Volume (vph)	162	157	354	276	
Ideal Flow (vphpl)	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>		0.850		0.865	
Fl <sub>t</sub> Protected					
Satd. Flow (prot)	1418	1538	1845	1596	
Fl <sub>t</sub> Permitted					
Satd. Flow (perm)	1418	1538	1845	1596	
Right Turn on Red		Yes		No	
Satd. Flow (RTOR)		171			
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 (%)	34%	5%	3%	3%	
Adj. Flow (vph)	176	171	385	300	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	176	171	385	300	
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	0.30	0.11	0.50	0.45	
Control Delay (s/veh)	13.4	0.1	15.3	15.3	
Queue Delay	0.0	0.0	0.0	0.0	

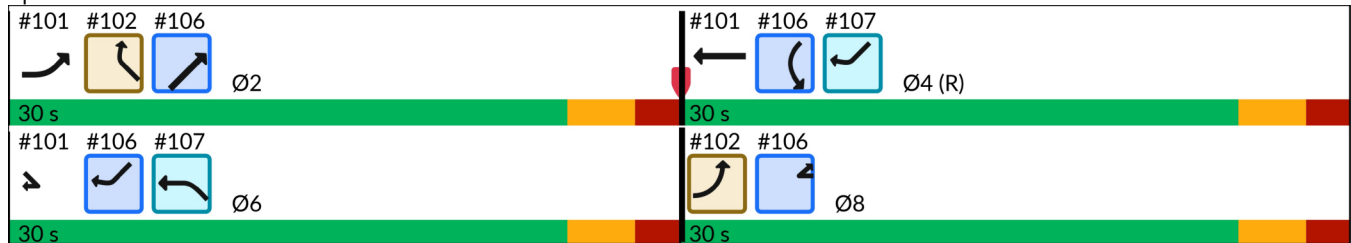


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	13.4	0.1	15.3	15.3	
LOS	B	A	B	B	
Approach Delay (s/veh)			15.3		
Approach LOS			B		
Queue Length 50th (ft)	41	0	120	75	
Queue Length 95th (ft)	80	0	190	134	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	590	1538	768	665	
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	0.30	0.11	0.50	0.45	

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:	0.50
Intersection Signal Delay (s/veh):	12.5
Intersection LOS:	B
Intersection Capacity Utilization:	44.1%
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





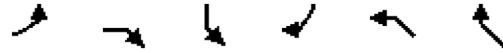
Movement	EBL	EBR	WBT	SER
Lane Configurations				
Traffic Volume (vph)	162	157	354	276
Future Volume (vph)	162	157	354	276
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.87
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1418	1538	1845	1596
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1418	1538	1845	1596
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	171	385	300
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	176	171	385	300
Heavy Vehicles (%)	34%	5%	3%	3%
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)	590	1538	768	665
v/s Ratio Prot	0.12		c0.21	c0.19
v/s Ratio Perm		0.11		
v/c Ratio	0.30	0.11	0.50	0.45
Uniform Delay, d1	11.7	0.0	12.9	12.6
Progression Factor	1.00	1.00	0.98	1.00
Incremental Delay, d2	1.3	0.1	2.2	2.2
Delay (s)	12.9	0.1	14.8	14.8
Level of Service	B	A	B	B
Approach Delay (s/veh)			14.8	
Approach LOS			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	51	0	0	0	0	162		
Future Volume (vph)	51	0	0	0	0	162		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected	0.950							
Satd. Flow (prot)	1517	0	0	0	0	1418		
Flt Permitted	0.950							
Satd. Flow (perm)	1517	0	0	0	0	1418		
Right Turn on Red	No	No		No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	246		392		85			
Travel Time (s)	6.7		10.7		2.3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	19%	0%	0%	0%	0%	34%		
Adj. Flow (vph)	55	0	0	0	0	176		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	55	0	0	0	0	176		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	L NA	Right	Left	Right	Left	Right		
Median Width(ft)	12		0		0			
Link Offset(ft)	0		0		12			
Crosswalk Width(ft)	16		16		16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15	9	15	25		
Turn Type	Prot					Prot		
Protected Phases	8					2	4	6
Permitted Phases								
Minimum Split (s)	23.0					23.0	23.0	10.0
Total Split (s)	30.0					30.0	30.0	30.0
Total Split (%)	50.0%					50.0%	50%	50%
Maximum Green (s)	25.0					25.0	25.0	25.0
Yellow Time (s)	3.0					3.0	3.0	3.0
All-Red Time (s)	2.0					2.0	2.0	2.0
Lost Time Adjust (s)	0.0					0.0		
Total Lost Time (s)	5.0					5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)	7.0						7.0	
Flash Don't Walk (s)	11.0						11.0	
Pedestrian Calls (#/hr)	0						0	
Act Effct Green (s)	25.0					25.0		
Actuated g/C Ratio	0.42					0.42		
v/c Ratio	0.09					0.30		
Control Delay (s/veh)	11.1					2.6		
Queue Delay	0.0					0.0		

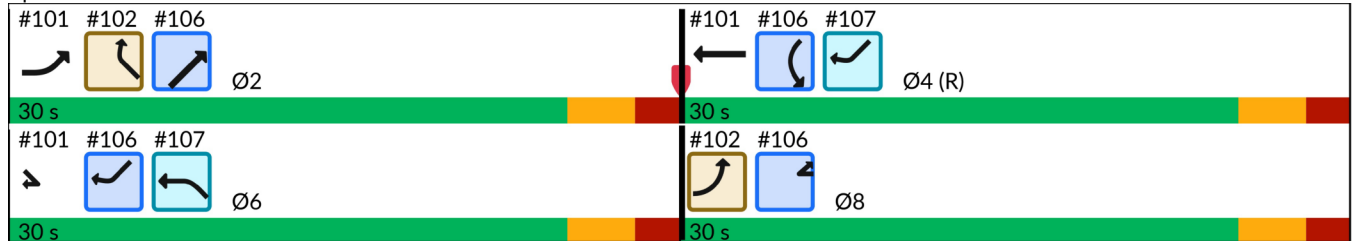


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	11.1							2.6
LOS	B							A
Approach Delay (s/veh)	11.1				2.6			
Approach LOS	B				A			
Queue Length 50th (ft)	12							3
Queue Length 95th (ft)	30							5
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	632							590
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.09							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:	0.50
Intersection Signal Delay (s/veh):	4.6
Intersection LOS:	A
Intersection Capacity Utilization:	23.0%
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)	51	0	0	0	0	162
Future Volume (vph)	51	0	0	0	0	162
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)	1517					1418
Flt Permitted	0.95					1.00
Satd. Flow (perm)	1517					1418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	0	0	0	0	176
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	55	0	0	0	0	176
Heavy Vehicles (%)	19%	0%	0%	0%	0%	34%
Turn Type	Prot					Prot
Protected Phases	8					2
Permitted Phases						
Actuated Green, G (s)	25.0					25.0
Effective Green, g (s)	25.0					25.0
Actuated g/C Ratio	0.42					0.42
Clearance Time (s)	5.0					5.0
Lane Grp Cap (vph)	632					590
v/s Ratio Prot	c0.04					c0.12
v/s Ratio Perm						
v/c Ratio	0.09					0.30
Uniform Delay, d1	10.6					11.7
Progression Factor	1.00					0.11
Incremental Delay, d2	0.3					1.3
Delay (s)	10.9					2.5
Level of Service	B					A
Approach Delay (s/veh)	10.9		0.0		2.5	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	23.0%	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	56	0	0	157
Future Volume (vph)	0	0	56	0	0	157
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 <sub>t</sub>						0.865
Fl <sub>t</sub> Protected			0.950			
Satd. Flow (prot)	0	0	1583	0	0	1565
Fl <sub>t</sub> Permitted			0.950			
Satd. Flow (perm)	0	0	1583	0	0	1565
Link Speed (mph)	30		30		30	
Link Distance (ft)	720		202		211	
Travel Time (s)	16.4		4.6		4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	14%	0%	0%	5%
Adj. Flow (vph)	0	0	61	0	0	171
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	61	0	0	171
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	38.3%
	ICU Level of Service A
Analysis Period (min)	15



Movement	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	0	0	56	0	0	157
Future Volume (Veh/h)	0	0	56	0	0	157
Sign Control	Free		Yield		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	61	0	0	171
<b>Pedestrians</b>						
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			171	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			171	0	0	
tC, single (s)			6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)			3.6	3.3	2.2	
p0 queue free %			92	100	100	
cM capacity (veh/h)			792	1091	1636	
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NE 1</b>				
Volume Total	61	171				
Volume Left	61	0				
Volume Right	0	0				
cSH	792	1700				
Volume to Capacity	0.08	0.10				
Queue Length 95th (ft)	6	0				
Control Delay (s/veh)	9.9	0.0				
Lane LOS	A					
Approach Delay (s/veh)	9.9	0.0				
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			2.6			
Intersection Capacity Utilization			38.3%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	46	67	105	231
Future Volume (vph)	46	67	105	231
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.865			0.850
Flt Protected				
Satd. Flow (prot)	1442	1667	1759	1538
Flt Permitted				
Satd. Flow (perm)	1442	1667	1759	1538
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				251
Link Speed (mph)		25		
Link Distance (ft)		134		
Travel Time (s)		3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	14%	14%	8%	5%
Adj. Flow (vph)	50	73	114	251
Shared Lane Traffic (%)				
Lane Group Flow (vph)	50	73	114	251
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Right	Left	Left	Right
Median Width(ft)		12		
Link Offset(ft)		-6		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	9
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Minimum Split (s)	23.0	23.0	23.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Walk Time (s)	7.0		7.0	
Flash Don't Walk (s)	11.0		11.0	
Pedestrian Calls (#/hr)	0		0	
Act Effct Green (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
v/c Ratio	0.08	0.11	0.16	0.32
Control Delay (s/veh)	11.1	8.1	11.7	3.1
Queue Delay	0.0	0.0	0.0	0.0

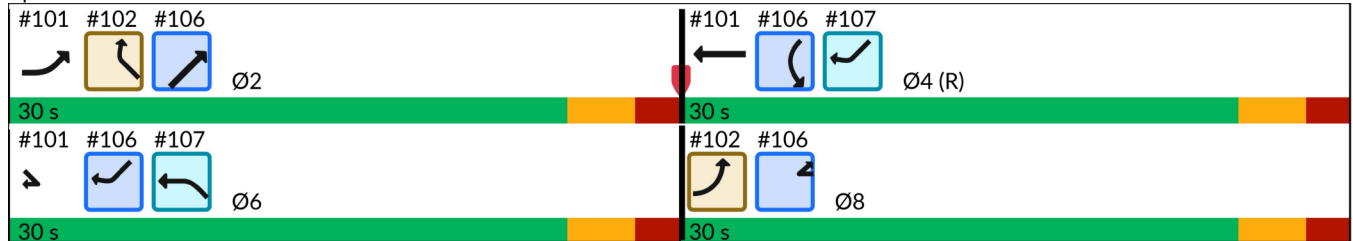


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.1	8.1	11.7	3.1
LOS	B	A	B	A
Approach Delay (s/veh)	8.1			
Approach LOS	A			
Queue Length 50th (ft)	10	11	25	0
Queue Length 95th (ft)	28	24	52	35
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	600	694	732	787
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.08	0.11	0.16	0.32

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.50
Intersection Signal Delay (s/veh):	6.7
Intersection LOS:	A
Intersection Capacity Utilization:	18.5%
ICU Level of Service:	A
Analysis Period (min):	15

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





Movement	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	46	67	105	231
Future Volume (vph)	46	67	105	231
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	0.87	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1442	1667	1759	1538
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1442	1667	1759	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	73	114	251
RTOR Reduction (vph)	0	0	0	146
Lane Group Flow (vph)	50	73	114	105
Heavy Vehicles (%)	14%	14%	8%	5%
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Actuated Green, G (s)	25.0	25.0	25.0	25.0
Effective Green, g (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	600	694	732	640
v/s Ratio Prot	0.03	0.04	c0.06	c0.07
v/s Ratio Perm				
v/c Ratio	0.08	0.11	0.16	0.16
Uniform Delay, d1	10.6	10.7	10.9	11.0
Progression Factor	1.00	0.71	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.5	0.5
Delay (s)	10.8	7.9	11.4	11.5
Level of Service	B	A	B	B
Approach Delay (s/veh)		7.9		
Approach LOS		A		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	0	0	305	0	0	105		
Future Volume (vph)	0	0	305	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)	0	0	1752	0	0	1759		
Flt Permitted			0.950					
Satd. Flow (perm)	0	0	1752	0	0	1759		
Right Turn on Red		No	No	No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	390		186		73			
Travel Time (s)	10.6		5.1		2.0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	0%	0%	3%	0%	0%	8%		
Adj. Flow (vph)	0	0	332	0	0	114		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	332	0	0	114		
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			0.45			0.16		
Control Delay (s/veh)			15.1			1.6		
Queue Delay			0.0			0.0		

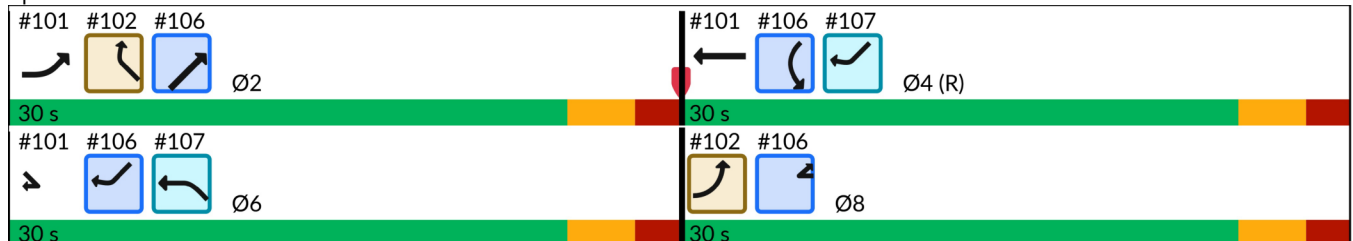


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			15.1			1.6		
LOS			B			A		
Approach Delay (s/veh)			15.1		1.6			
Approach LOS			B		A			
Queue Length 50th (ft)			82			2		
Queue Length 95th (ft)			144			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			730			732		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.45			0.16		

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:	0.50
Intersection Signal Delay (s/veh):	11.7
Intersection LOS:	B
Intersection Capacity Utilization:	33.3%
ICU Level of Service:	A
Analysis Period (min):	15

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

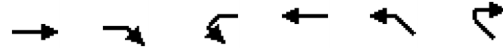


HCM Signalized Intersection Capacity Analysis  
 107: NB PWP to WB Clover Hill

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 10/12/2025



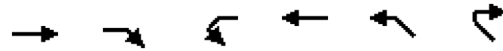
Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	305	0	0	105
Future Volume (vph)	0	0	305	0	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			1752			1759
Flt Permitted			0.95			1.00
Satd. Flow (perm)			1752			1759
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	332	0	0	114
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	332	0	0	114
Heavy Vehicles (%)	0%	0%	3%	0%	0%	8%
Turn Type			Prot			Prot
Protected Phases			6			4
Permitted Phases						
Actuated Green, G (s)			25.0			25.0
Effective Green, g (s)			25.0			25.0
Actuated g/C Ratio			0.42			0.42
Clearance Time (s)			5.0			5.0
Lane Grp Cap (vph)			730			732
v/s Ratio Prot			c0.19			c0.06
v/s Ratio Perm						
v/c Ratio			0.45			0.16
Uniform Delay, d1			12.6			10.9
Progression Factor			1.00			0.10
Incremental Delay, d2			2.0			0.5
Delay (s)			14.6			1.6
Level of Service			B			A
Approach Delay (s/veh)	0.0		14.6		1.6	
Approach LOS	A		B		A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay (s/veh)			11.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.31			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			33.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (vph)	0	0	0	231	146	0
Future Volume (vph)	0	0	0	231	146	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
<b>Fr</b>						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	1810	1318	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1810	1318	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%	37%	0%
Adj. Flow (vph)	0	0	0	251	159	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	251	159	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	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.3%
	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	231	146	0
Future Volume (Veh/h)	0	0	0	231	146	0
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	251	159	0
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)	316					
pX, platoon unblocked						
vC, conflicting volume			0	251	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	251	0	
tC, single (s)			4.1	6.8	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.8	3.3	
p0 queue free %			100	76	100	
cM capacity (veh/h)			1636	668	1091	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NW 1</b>				
Volume Total	251	159				
Volume Left	0	159				
Volume Right	0	0				
cSH	1700	668				
Volume to Capacity	0.15	0.24				
Queue Length 95th (ft)	0	23				
Control Delay (s/veh)	0.0	12.1				
Lane LOS			B			
Approach Delay (s/veh)	0.0	12.1				
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			4.7			
Intersection Capacity Utilization			36.3%	ICU Level of Service		A
Analysis Period (min)			15			
















Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↶	↷	↷	↶	↷
Traffic Volume (vph)	649	1	5	62	0	485
Future Volume (vph)	649	1	5	62	0	485
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 <sub>t</sub>				0.850		0.850
Fl <sub>t</sub> Protected		0.952				
Satd. Flow (prot)	0	1791	1900	1524	1900	1583
Fl <sub>t</sub> Permitted		0.952				
Satd. Flow (perm)	0	1791	1900	1524	1900	1583
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 (%)	1%	0%	0%	6%	0%	2%
Adj. Flow (vph)	705	1	5	67	0	527
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	706	5	67	0	527
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	46.5%
	ICU Level of Service A
Analysis Period (min)	15

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

















Manasses HEF EA  
 10/12/2025

						
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	649	1	5	62	0	485
Future Volume (Veh/h)	649	1	5	62	0	485
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)	705	1	5	67	0	527
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	3	0	0	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3	0	0	0	0	
tC, single (s)	7.1	6.5	6.5	6.3	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.4	2.2	
p0 queue free %	26	100	99	94	100	
cM capacity (veh/h)	954	900	900	1073	1636	
Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2	
Volume Total	706	5	67	0	527	
Volume Left	705	0	0	0	0	
Volume Right	0	0	67	0	527	
cSH	954	900	1073	1700	1700	
Volume to Capacity	0.74	0.00*	0.06	0.00	0.31	
Queue Length 95th (ft)	174	0	5	0	0	
Control Delay (s/veh)	18.7	9.0	8.6	0.0	0.0	
Lane LOS	C	A	A			
Approach Delay (s/veh)	18.7	8.6		0.0		
Approach LOS	C	A				
Intersection Summary						
Average Delay			10.6			
Intersection Capacity Utilization			46.5%		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  
 10/12/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	36	5	5	38	397	3	53	326	85	9	0
Future Volume (vph)	11	36	5	5	38	397	3	53	326	85	9	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.988			0.878			0.885				
Fl <sub>t</sub> Protected		0.989			0.999						0.957	
Satd. Flow (prot)	0	1857	0	0	1652	0	0	1663	0	0	1737	0
Fl <sub>t</sub> Permitted		0.989			0.999						0.957	
Satd. Flow (perm)	0	1857	0	0	1652	0	0	1663	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%	1%	0%	8%	0%	4%	11%	0%
Adj. Flow (vph)	12	39	5	5	41	432	3	58	354	92	10	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	478	0	0	415	0	0	102	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	65.4%
ICU Level of Service	C
Analysis Period (min)	15

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

Manasses HEF EA  
 10/12/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	36	5	5	38	397	3	53	326	85	9	0
Future Volume (Veh/h)	11	36	5	5	38	397	3	53	326	85	9	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	39	5	5	41	432	3	58	354	92	10	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	456	612	10	460	435	235	10			412		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	456	612	10	460	435	235	10			412		
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 %	94	90	100	99	91	46	100			92		
cM capacity (veh/h)	211	377	1077	443	475	807	1623			1136		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	56	478	415	102								
Volume Left	12	5	3	92								
Volume Right	5	432	354	0								
cSH	339	755	1623	1136								
Volume to Capacity	0.17	0.63	0.00*	0.08								
Queue Length 95th (ft)	15	114	0	7								
Control Delay (s/veh)	17.7	17.6	0.1	7.7								
Lane LOS	C	C	A	A								
Approach Delay (s/veh)	17.7	17.6	0.1	7.7								
Approach LOS	C	C										
Intersection Summary												
Average Delay			9.7									
Intersection Capacity Utilization			65.4%		ICU Level of Service					C		
Analysis Period (min)			15									

\* Value less than 0.01.

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	36	5	5	38	397	3	53	326	85	9	0
Future Vol, veh/h	11	36	5	5	38	397	3	53	326	85	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	1	0	8	0	4	11	0
Mvmt Flow	12	39	5	5	41	432	3	58	354	92	10	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	456	612	10	457	435	235	10	0	0	412	0	0
Stage 1	194	194	-	241	241	-	-	-	-	-	-	-
Stage 2	262	418	-	216	194	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	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	3.309	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	518	411	1077	517	517	807	1623	-	-	1136	-	-
Stage 1	812	744	-	767	710	-	-	-	-	-	-	-
Stage 2	747	594	-	791	744	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	211	376	1077	444	474	807	1623	-	-	1136	-	-
Mov Cap-2 Maneuver	211	376	-	444	474	-	-	-	-	-	-	-
Stage 1	810	684	-	765	708	-	-	-	-	-	-	-
Stage 2	326	592	-	682	684	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	17.6		13.6		0.1		7.6	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1623	-	-	341	894	1136	-	-
HCM Lane V/C Ratio	0.002	-	-	0.166	0.535	0.081	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	17.6	13.6	8.4	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.6	3.2	0.3	-	-

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

Manasses HEF EA  
10/12/2025













Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	359	0	0	23	19	0
Future Volume (vph)	359	0	0	23	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected	0.950					
Satd. Flow (prot)	1787	1900	0	1827	1810	0
Flt Permitted	0.950					
Satd. Flow (perm)	1787	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 (%)	1%	0%	0%	4%	5%	0%
Adj. Flow (vph)	390	0	0	25	21	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	390	0	0	25	21	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
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	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.9%
	ICU Level of Service A
Analysis Period (min)	15

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

Manasses HEF EA  
10/12/2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	359	0	0	23	19	0
Future Volume (Veh/h)	359	0	0	23	19	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	390	0	0	25	21	0
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	46	21	21			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	46	21	21			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	60	100	100			
cM capacity (veh/h)	967	1062	1608			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>SB 1</b>		
Volume Total	390	0	25	21		
Volume Left	390	0	0	0		
Volume Right	0	0	0	0		
cSH	967	1700	1700	1700		
Volume to Capacity	0.40	0.00	0.01	0.01		
Queue Length 95th (ft)	49	0	0	0		
Control Delay (s/veh)	11.2	0.0	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s/veh)	11.2	0.0		0.0		
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	10.0					
Intersection Capacity Utilization	29.9%		ICU Level of Service	A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	10					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	359	0	0	23	19	0
Future Vol, veh/h	359	0	0	23	19	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	4	5	0
Mvmt Flow	390	0	0	25	21	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	46	21	-	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	-	-
Pot Cap-1 Maneuver	967	1062	0	-	-	0
Stage 1	1004	-	0	-	-	0
Stage 2	1000	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	967	1062	-	-	-	-
Mov Cap-2 Maneuver	967	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	967	-	-
HCM Lane V/C Ratio	-	0.404	-	-
HCM Ctrl Dly (s/v)	-	11.2	0	-
HCM Lane LOS	-	B	A	-
HCM 95th %tile Q (veh)	-	2	-	-

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

Manasses HEF EA  
10/12/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕	↕	↗
Traffic Volume (vph)	0	0	311	150	93	43
Future Volume (vph)	0	0	311	150	93	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			165
Storage Lanes	0	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.850
Fl <sub>t</sub> Protected				0.967		
Satd. Flow (prot)	0	0	0	1808	1827	1482
Fl <sub>t</sub> Permitted				0.967		
Satd. Flow (perm)	0	0	0	1808	1827	1482
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%	5%	4%	9%
Adj. Flow (vph)	0	0	338	163	101	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	501	101	47
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			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	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	35.1%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕	↕	↗
Traffic Volume (veh/h)	0	0	311	150	93	43
Future Volume (Veh/h)	0	0	311	150	93	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)	0	0	338	163	101	47
<b>Pedestrians</b>						
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	940	101	148			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	940	101	148			
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	77			
cM capacity (veh/h)	226	960	1446			
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>SB 1</b>	<b>SB 2</b>			
Volume Total	501	101	47			
Volume Left	338	0	0			
Volume Right	0	0	47			
cSH	1446	1700	1700			
Volume to Capacity	0.23	0.06	0.03			
Queue Length 95th (ft)	23	0	0			
Control Delay (s/veh)	6.3	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	6.3	0.0				
Approach LOS						
<b>Intersection Summary</b>						
Average Delay			4.8			
Intersection Capacity Utilization			35.1%	ICU Level of Service	A	
Analysis Period (min)			15			

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

Manasses HEF EA  
10/12/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	56	97	98	47	33
Future Volume (vph)	25	56	97	98	47	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0	145			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.944	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1570	1538	1787	1845	1636	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1570	1538	1787	1845	1636	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%	5%	1%	3%	3%	19%
Adj. Flow (vph)	27	61	105	107	51	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	61	105	107	87	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	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.0%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
10/12/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	56	97	98	47	33
Future Volume (Veh/h)	25	56	97	98	47	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	61	105	107	51	36
<b>Pedestrians</b>						
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	386	69	87			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	386	69	87			
tC, single (s)	6.6	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	95	94	93			
cM capacity (veh/h)	551	986	1515			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	
Volume Total	27	61	105	107	87	
Volume Left	27	0	105	0	0	
Volume Right	0	61	0	0	36	
cSH	551	986	1515	1700	1700	
Volume to Capacity	0.05	0.06	0.07	0.06	0.05	
Queue Length 95th (ft)	4	5	6	0	0	
Control Delay (s/veh)	11.9	8.9	7.6	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	9.8		3.7		0.0	
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.3			
Intersection Capacity Utilization			22.0%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	4.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↶	↷	↷
Traffic Vol, veh/h	25	56	97	98	47	33
Future Vol, veh/h	25	56	97	98	47	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	105	0	145	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	15	5	1	3	3	19
Mvmt Flow	27	61	105	107	51	36

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	386	69	87	0	0
Stage 1	69	-	-	-	-
Stage 2	317	-	-	-	-
Critical Hdwy	6.55	6.25	4.11	-	-
Critical Hdwy Stg 1	5.55	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-
Follow-up Hdwy	3.635	3.345	2.209	-	-
Pot Cap-1 Maneuver	592	986	1515	-	-
Stage 1	922	-	-	-	-
Stage 2	710	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	551	986	1515	-	-
Mov Cap-2 Maneuver	551	-	-	-	-
Stage 1	858	-	-	-	-
Stage 2	710	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.8	3.8	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1515	-	551	986	-	-
HCM Lane V/C Ratio	0.07	-	0.049	0.062	-	-
HCM Ctrl Dly (s/v)	7.6	-	11.9	8.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.2	-	0.2	0.2	-	-

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	36	104	36	10	51	36
Future Volume (vph)	36	104	36	10	51	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.900		0.970			
Flt Protected	0.987					0.972
Satd. Flow (prot)	1639	0	1843	0	0	1774
Flt Permitted	0.987					0.972
Satd. Flow (perm)	1639	0	1843	0	0	1774
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%	4%	0%	0%	7%	0%
Adj. Flow (vph)	39	113	39	11	55	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	50	0	0	94
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
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.5%		ICU Level of Service A			
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	36	104	36	10	51	36
Future Volume (Veh/h)	36	104	36	10	51	36
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	113	39	11	55	39
<b>Pedestrians</b>						
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	194	45			50	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	194	45			50	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	95	89			96	
cM capacity (veh/h)	771	1020			1525	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	152	50	94			
Volume Left	39	0	55			
Volume Right	113	11	0			
cSH	942	1700	1525			
Volume to Capacity	0.16	0.03	0.04			
Queue Length 95th (ft)	14	0	3			
Control Delay (s/veh)	9.6	0.0	4.5			
Lane LOS	A		A			
Approach Delay (s/veh)	9.6	0.0	4.5			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			6.3			
Intersection Capacity Utilization			26.5%		ICU Level of Service	A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	6.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	36	104	36	10	51	36
Future Vol, veh/h	36	104	36	10	51	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	0	7	0
Mvmt Flow	39	113	39	11	55	39

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	194	45	0	0	50
Stage 1	45	-	-	-	-
Stage 2	149	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.17
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.263
Pot Cap-1 Maneuver	799	1019	-	-	1525
Stage 1	983	-	-	-	-
Stage 2	884	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	769	1019	-	-	1525
Mov Cap-2 Maneuver	769	-	-	-	-
Stage 1	983	-	-	-	-
Stage 2	851	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.6	0	4.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	940	1525
HCM Lane V/C Ratio	-	-	0.162	0.036
HCM Ctrl Dly (s/v)	-	-	9.6	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.6	0.1

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












Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	0	135	15	0	121
Future Volume (vph)	15	0	135	15	0	121
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	0.987					
Flt Protected	0.950					
Satd. Flow (prot)	1421	0	1780	0	0	1845
Flt Permitted	0.950					
Satd. Flow (perm)	1421	0	1780	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 (%)	27%	0%	3%	27%	0%	3%
Adj. Flow (vph)	16	0	147	16	0	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	163	0	0	132
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	18.0%
Analysis Period (min)	15
	ICU Level of Service A

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

Manasses HEF EA  
 10/12/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	0	135	15	0	121
Future Volume (Veh/h)	15	0	135	15	0	121
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)	16	0	147	16	0	132
<b>Pedestrians</b>						
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	287	155			163	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	287	155			163	
tC, single (s)	6.7	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.7	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	654	896			1428	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	16	163	132			
Volume Left	16	0	0			
Volume Right	0	16	0			
cSH	654	1700	1428			
Volume to Capacity	0.02	0.10	0.00			
Queue Length 95th (ft)	2	0	0			
Control Delay (s/veh)	10.6	0.0	0.0			
Lane LOS	B					
Approach Delay (s/veh)	10.6	0.0	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			0.5			
Intersection Capacity Utilization			18.0%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	15	0	135	15	0	121
Future Vol, veh/h	15	0	135	15	0	121
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, %	27	0	3	27	0	3
Mvmt Flow	16	0	147	16	0	132

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	287	155	0	0	163
Stage 1	155	-	-	-	-
Stage 2	132	-	-	-	-
Critical Hdwy	6.67	6.2	-	-	4.1
Critical Hdwy Stg 1	5.67	-	-	-	-
Critical Hdwy Stg 2	5.67	-	-	-	-
Follow-up Hdwy	3.743	3.3	-	-	2.2
Pot Cap-1 Maneuver	654	896	-	-	1428
Stage 1	816	-	-	-	-
Stage 2	836	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	654	896	-	-	1428
Mov Cap-2 Maneuver	654	-	-	-	-
Stage 1	816	-	-	-	-
Stage 2	836	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.6	0	0
HCM LOS	B		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	654	1428
HCM Lane V/C Ratio	-	-	0.025	-
HCM Ctrl Dly (s/v)	-	-	10.6	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q (veh)	-	-	0.1	0

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	1	135	0	1	121
Future Volume (vph)	0	1	135	0	1	121
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 <sub>t</sub>	0.865					
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	1644	0	1845	0	0	1845
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	1644	0	1845	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%	3%	0%	0%	3%
Adj. Flow (vph)	0	1	147	0	1	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	147	0	0	133
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	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	17.2%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	135	0	1	121
Future Volume (Veh/h)	0	1	135	0	1	121
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	1	147	0	1	132
<b>Pedestrians</b>						
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	281	147			147	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	281	147			147	
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)	713	905			1447	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	1	147	133			
Volume Left	0	0	1			
Volume Right	1	0	0			
cSH	905	1700	1447			
Volume to Capacity	0.00*	0.09	0.00*			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	9.0	0.0	0.1			
Lane LOS	A		A			
Approach Delay (s/veh)	9.0	0.0	0.1			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.1			
Intersection Capacity Utilization			17.2%		ICU Level of Service	A
Analysis Period (min)			15			

\* Value less than 0.01.

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			4
Traffic Vol, veh/h	0	1	135	0	1	121
Future Vol, veh/h	0	1	135	0	1	121
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	3
Mvmt Flow	0	1	147	0	1	132

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	281	147	0	0	147	0
Stage 1	147	-	-	-	-	-
Stage 2	134	-	-	-	-	-
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	713	905	-	-	1447	-
Stage 1	885	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	712	905	-	-	1447	-
Mov Cap-2 Maneuver	712	-	-	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	905	1447
HCM Lane V/C Ratio	-	-	0.001	0.001
HCM Ctrl Dly (s/v)	-	-	9	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0	0

Lanes, Volumes, Timings  
 14: Wakeman Dr & Employee Lot



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	103	136	0	19	59
Future Volume (vph)	0	103	136	0	19	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
Fr <sub>t</sub>					0.898	
Fl <sub>t</sub> Protected					0.988	
Satd. Flow (prot)	0	1827	1845	0	1686	0
Fl <sub>t</sub> Permitted					0.988	
Satd. Flow (perm)	0	1827	1845	0	1686	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%	4%	3%	0%	0%	0%
Adj. Flow (vph)	0	112	148	0	21	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	112	148	0	85	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	18.5%
	ICU Level of Service A
Analysis Period (min)	15

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

Manasses HEF EA  
 10/12/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	0	103	136	0	19	59
Future Volume (Veh/h)	0	103	136	0	19	59
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	112	148	0	21	64
<b>Pedestrians</b>						
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	148				260	148
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	148				260	148
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				97	93
cM capacity (veh/h)	1446				733	904
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NW 1</b>	<b>SW 1</b>			
Volume Total	112	148	85			
Volume Left	0	0	21			
Volume Right	0	0	64			
cSH	1446	1700	855			
Volume to Capacity	0.00	0.09	0.10			
Queue Length 95th (ft)	0	0	8			
Control Delay (s/veh)	0.0	0.0	9.7			
Lane LOS				A		
Approach Delay (s/veh)	0.0	0.0	9.7			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				2.4		
Intersection Capacity Utilization	18.5%			ICU Level of Service		A
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.4					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	0	103	136	0	19	59
Future Vol, veh/h	0	103	136	0	19	59
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	4	3	0	0	0
Mvmt Flow	0	112	148	0	21	64




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	148	0	0	260	148
Stage 1	-	-	-	148	-
Stage 2	-	-	-	112	-
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	1446	-	-	733	904
Stage 1	-	-	-	884	-
Stage 2	-	-	-	918	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1446	-	-	733	904
Mov Cap-2 Maneuver	-	-	-	733	-
Stage 1	-	-	-	884	-
Stage 2	-	-	-	918	-

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1446	855
HCM Lane V/C Ratio	-	-	-	0.099
HCM Ctrl Dly (s/v)	-	-	0	9.7
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0	0.3




















Lanes, Volumes, Timings  
15: Gateway Blvd

Manassas HEF EA  
10/12/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	74	1	14	28	41	3	4	11	46	5	42
Future Volume (vph)	75	74	1	14	28	41	3	4	11	46	5	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.910			0.915				0.850
Flt Protected	0.950			0.950				0.992			0.957	
Satd. Flow (prot)	1805	3370	0	1530	3171	0	0	1603	0	0	1724	1524
Flt Permitted	0.950			0.950				0.992			0.957	
Satd. Flow (perm)	1805	3370	0	1530	3171	0	0	1603	0	0	1724	1524
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1357			2771			405			407	
Travel Time (s)		26.4			54.0			11.0			11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	0%	18%	9%	0%	0%	0%	12%	6%	0%	6%
Adj. Flow (vph)	82	80	1	15	30	45	3	4	12	50	5	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	81	0	15	75	0	0	19	0	0	55	46
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	27.0%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
 15: Gateway Blvd

Manasses HEF EA  
 10/12/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	74	1	14	28	41	3	4	11	46	5	42
Future Volume (Veh/h)	75	74	1	14	28	41	3	4	11	46	5	42
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	80	1	15	30	45	3	4	12	50	5	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	75			81			315	350	41	301	328	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	75			81			315	350	41	301	328	38
tC, single (s)	4.1			4.5			7.5	6.5	7.1	7.6	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.4			3.5	4.0	3.4	3.6	4.0	3.4
p0 queue free %	95			99			99	99	99	91	99	95
cM capacity (veh/h)	1537			1405			559	541	990	578	557	1013
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	82	53	28	15	20	55	19	101				
Volume Left	82	0	0	15	0	0	3	50				
Volume Right	0	0	1	0	0	45	12	46				
cSH	1537	1700	1700	1405	1700	1700	764	1059				
Volume to Capacity	0.05	0.03	0.02	0.01	0.01	0.03	0.02	0.10				
Queue Length 95th (ft)	4	0	0	1	0	0	2	8				
Control Delay (s/veh)	7.5	0.0	0.0	7.6	0.0	0.0	9.8	10.5				
Lane LOS	A			A			A	B				
Approach Delay (s/veh)	3.8			1.3			9.8	10.5				
Approach LOS							A	B				
<b>Intersection Summary</b>												
Average Delay			5.3									
Intersection Capacity Utilization			27.0%		ICU Level of Service			A				
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	↕
Traffic Vol, veh/h	75	74	1	14	28	41	3	4	11	46	5	42
Future Vol, veh/h	75	74	1	14	28	41	3	4	11	46	5	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	18	9	0	0	0	12	6	0	6
Mvmt Flow	82	80	1	15	30	45	3	4	12	50	5	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	75	0	0	81	0	0	293	350	41	289	328	38
Stage 1	-	-	-	-	-	-	245	245	-	83	83	-
Stage 2	-	-	-	-	-	-	48	105	-	206	245	-
Critical Hdwy	4.1	-	-	4.46	-	-	7.5	6.5	7.14	7.62	6.5	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.62	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.62	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.42	3.56	4	3.36
Pot Cap-1 Maneuver	1537	-	-	1405	-	-	642	577	989	631	594	1013
Stage 1	-	-	-	-	-	-	743	707	-	904	830	-
Stage 2	-	-	-	-	-	-	965	812	-	765	707	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1537	-	-	1405	-	-	579	541	989	589	557	1013
Mov Cap-2 Maneuver	-	-	-	-	-	-	579	541	-	589	557	-
Stage 1	-	-	-	-	-	-	704	670	-	856	821	-
Stage 2	-	-	-	-	-	-	906	803	-	711	670	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	3.7			1.3			9.9			10.4		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	760	1537	-	-	1405	-	-	586	1013
HCM Lane V/C Ratio	0.026	0.053	-	-	0.011	-	-	0.095	0.045
HCM Ctrl Dly (s/v)	9.9	7.5	-	-	7.6	-	-	11.8	8.7
HCM Lane LOS	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0.1	0.2	-	-	0	-	-	0.3	0.1



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	357	355	240	245	
Future Volume (vph)	357	355	240	245	
Ideal Flow (vphpl)	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>		0.850		0.865	
Fl <sub>t</sub> Protected					
Satd. Flow (prot)	1863	1599	1881	1580	
Fl <sub>t</sub> Permitted					
Satd. Flow (perm)	1863	1599	1881	1580	
Right Turn on Red		Yes		No	
Satd. Flow (RTOR)		386			
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 (%)	2%	1%	1%	4%	
Adj. Flow (vph)	388	386	261	266	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	388	386	261	266	
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	0.50	0.24	0.33	0.40	
Control Delay (s/veh)	15.7	0.4	13.4	14.6	
Queue Delay	0.0	0.0	0.0	0.0	

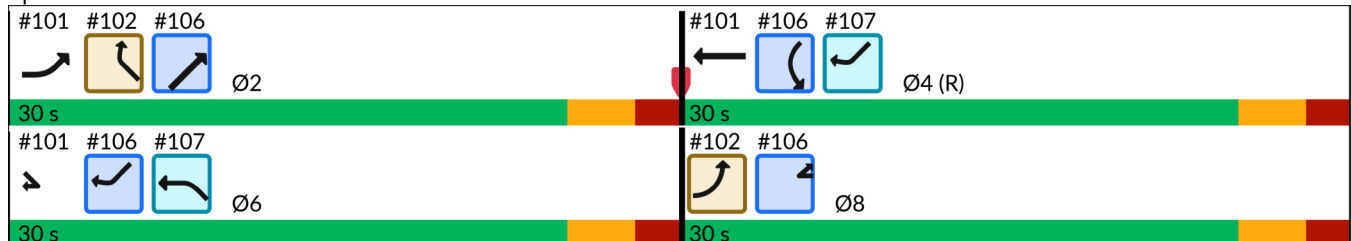


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	15.7	0.4	13.4	14.6	
LOS	B	A	B	B	
Approach Delay (s/veh)			13.4		
Approach LOS			B		
Queue Length 50th (ft)	99	0	76	64	
Queue Length 95th (ft)	168	0	130	118	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	776	1599	783	658	
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	0.50	0.24	0.33	0.40	

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:	0.50
Intersection Signal Delay (s/veh):	10.5
Intersection LOS:	B
Intersection Capacity Utilization:	39.9%
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)	357	355	240	245
Future Volume (vph)	357	355	240	245
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)	1863	1599	1881	1580
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1863	1599	1881	1580
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	388	386	261	266
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	388	386	261	266
Heavy Vehicles (%)	2%	1%	1%	4%
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)	776	1599	783	658
v/s Ratio Prot	c0.21		c0.14	0.17
v/s Ratio Perm		0.24		
v/c Ratio	0.50	0.24	0.33	0.40
Uniform Delay, d1	12.9	0.0	11.9	12.3
Progression Factor	1.00	1.00	1.01	1.00
Incremental Delay, d2	2.3	0.4	1.1	1.8
Delay (s)	15.2	0.4	13.0	14.1
Level of Service	B	A	B	B
Approach Delay (s/veh)			13.0	
Approach LOS			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.9%	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)	197	0	0	0	0	357		
Future Volume (vph)	197	0	0	0	0	357		
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	1863		
Flt Permitted	0.950							
Satd. Flow (perm)	1787	0	0	0	0	1863		
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%	2%		
Adj. Flow (vph)	207	0	0	0	0	388		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	207	0	0	0	0	388		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	L NA	Right	Left	Right	Left	Right		
Median Width(ft)	12		0		0			
Link Offset(ft)	0		0		12			
Crosswalk Width(ft)	16		16		16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15	9	15	25		
Turn Type	Prot					Prot		
Protected Phases	8					2	4	6
Permitted Phases								
Minimum Split (s)	23.0					23.0	23.0	10.0
Total Split (s)	30.0					30.0	30.0	30.0
Total Split (%)	50.0%					50.0%	50%	50%
Maximum Green (s)	25.0					25.0	25.0	25.0
Yellow Time (s)	3.0					3.0	3.0	3.0
All-Red Time (s)	2.0					2.0	2.0	2.0
Lost Time Adjust (s)	0.0					0.0		
Total Lost Time (s)	5.0					5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)	7.0						7.0	
Flash Don't Walk (s)	11.0						11.0	
Pedestrian Calls (#/hr)	0						0	
Act Effct Green (s)	25.0					25.0		
Actuated g/C Ratio	0.42					0.42		
v/c Ratio	0.28					0.50		
Control Delay (s/veh)	12.9					3.3		
Queue Delay	0.0					0.0		

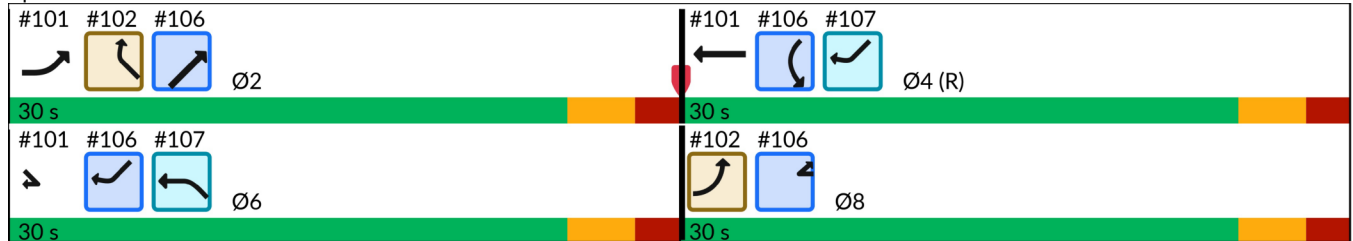


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	12.9						3.3	
LOS	B						A	
Approach Delay (s/veh)	12.9						3.3	
Approach LOS	B						A	
Queue Length 50th (ft)	47						6	
Queue Length 95th (ft)	88						9	
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	744						776	
Starvation Cap Reductn	0						0	
Spillback Cap Reductn	0						0	
Storage Cap Reductn	0						0	
Reduced v/c Ratio	0.28						0.50	

**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:	0.50
Intersection Signal Delay (s/veh):	6.7
Intersection LOS:	A
Intersection Capacity Utilization:	28.7%
ICU Level of Service:	A
Analysis Period (min):	15

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





Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations	↗					↗
Traffic Volume (vph)	197	0	0	0	0	357
Future Volume (vph)	197	0	0	0	0	357
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					1863
Flt Permitted	0.95					1.00
Satd. Flow (perm)	1787					1863
Peak-hour factor, PHF	0.95	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	0	0	0	0	388
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	207	0	0	0	0	388
Heavy Vehicles (%)	1%	0%	0%	0%	0%	2%
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					776
v/s Ratio Prot	c0.12					c0.21
v/s Ratio Perm						
v/c Ratio	0.28					0.50
Uniform Delay, d1	11.5					12.9
Progression Factor	1.00					0.10
Incremental Delay, d2	0.9					2.0
Delay (s)	12.5					3.3
Level of Service	B					A
Approach Delay (s/veh)	12.5		0.0		3.3	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	28.7%	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	355
Future Volume (vph)	0	0	62	0	0	355
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 <sub>t</sub>						0.865
Fl <sub>t</sub> Protected			0.950			
Satd. Flow (prot)	0	0	1752	0	0	1627
Fl <sub>t</sub> Permitted			0.950			
Satd. Flow (perm)	0	0	1752	0	0	1627
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%	1%
Adj. Flow (vph)	0	0	67	0	0	386
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	67	0	0	386
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	43.5%
	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	355
Future Volume (Veh/h)	0	0	62	0	0	355
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	386
<b>Pedestrians</b>						
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			386	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			386	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 %			89	100	100	
cM capacity (veh/h)			615	1091	1636	
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NE 1</b>				
Volume Total	67	386				
Volume Left	67	0				
Volume Right	0	0				
cSH	615	1700				
Volume to Capacity	0.11	0.23				
Queue Length 95th (ft)	9	0				
Control Delay (s/veh)	11.6	0.0				
Lane LOS	B					
Approach Delay (s/veh)	11.6	0.0				
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			1.7			
Intersection Capacity Utilization			43.5%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	63	235	82	146
Future Volume (vph)	63	235	82	146
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.865			0.850
Flt Protected				
Satd. Flow (prot)	1336	1881	1827	1568
Flt Permitted				
Satd. Flow (perm)	1336	1881	1827	1568
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				159
Link Speed (mph)		25		
Link Distance (ft)		134		
Travel Time (s)		3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	23%	1%	4%	3%
Adj. Flow (vph)	68	255	89	159
Shared Lane Traffic (%)				
Lane Group Flow (vph)	68	255	89	159
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Right	Left	Left	Right
Median Width(ft)		12		
Link Offset(ft)		-6		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	9
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Minimum Split (s)	23.0	23.0	23.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Walk Time (s)	7.0		7.0	
Flash Don't Walk (s)	11.0		11.0	
Pedestrian Calls (#/hr)	0		0	
Act Effct Green (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
v/c Ratio	0.12	0.33	0.12	0.21
Control Delay (s/veh)	11.6	12.1	11.3	3.1
Queue Delay	0.0	0.0	0.0	0.0

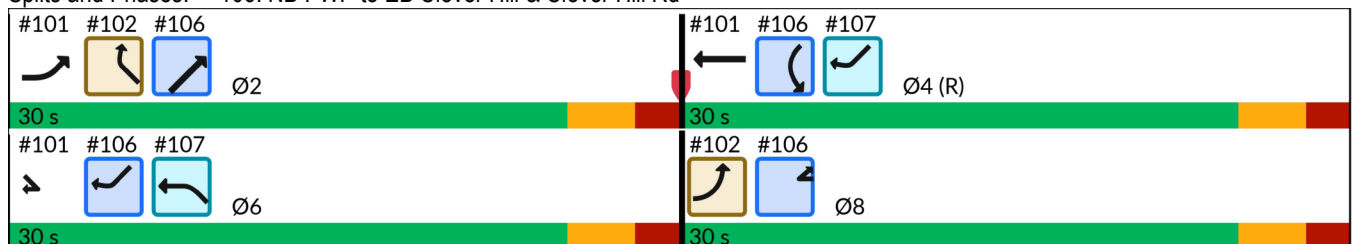


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.6	12.1	11.3	3.1
LOS	B	B	B	A
Approach Delay (s/veh)	12.1			
Approach LOS	B			
Queue Length 50th (ft)	14	46	19	0
Queue Length 95th (ft)	36	102	42	28
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	556	783	761	746
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.33	0.12	0.21

**Intersection Summary**

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.50
Intersection Signal Delay (s/veh):	9.4
Intersection LOS:	A
Intersection Capacity Utilization:	24.9%
ICU Level of Service:	A
Analysis Period (min):	15

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





Movement	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	63	235	82	146
Future Volume (vph)	63	235	82	146
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	0.87	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1336	1881	1827	1568
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1336	1881	1827	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	255	89	159
RTOR Reduction (vph)	0	0	0	93
Lane Group Flow (vph)	68	255	89	66
Heavy Vehicles (%)	23%	1%	4%	3%
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Actuated Green, G (s)	25.0	25.0	25.0	25.0
Effective Green, g (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	556	783	761	653
v/s Ratio Prot	c0.05	c0.14	0.05	0.04
v/s Ratio Perm				
v/c Ratio	0.12	0.33	0.12	0.10
Uniform Delay, d1	10.8	11.8	10.7	10.7
Progression Factor	1.00	0.91	1.00	1.00
Incremental Delay, d2	0.5	1.0	0.3	0.3
Delay (s)	11.2	11.8	11.0	11.0
Level of Service	B	B	B	B
Approach Delay (s/veh)		11.8		
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	0.22		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.9%	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	220	0	0	82		
Future Volume (vph)	0	0	220	0	0	82		
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	1787	0	0	1827		
Flt Permitted			0.950					
Satd. Flow (perm)	0	0	1787	0	0	1827		
Right Turn on Red		No	No	No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	390		186		73			
Travel Time (s)	10.6		5.1		2.0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	0%	0%	1%	0%	0%	4%		
Adj. Flow (vph)	0	0	239	0	0	89		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	239	0	0	89		
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			0.32			0.12		
Control Delay (s/veh)			13.3			1.5		
Queue Delay			0.0			0.0		

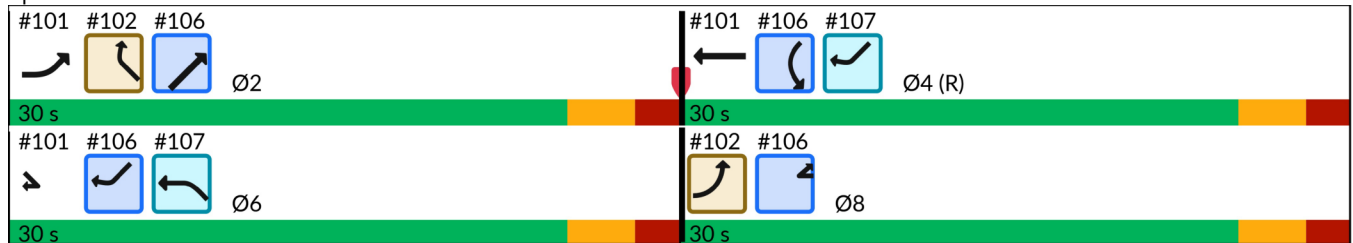


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			13.3			1.5		
LOS			B			A		
Approach Delay (s/veh)			13.3		1.5			
Approach LOS			B		A			
Queue Length 50th (ft)			56			1		
Queue Length 95th (ft)			101			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			744			761		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.32			0.12		

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:	0.50
Intersection Signal Delay (s/veh):	10.1
Intersection LOS:	B
Intersection Capacity Utilization:	28.1%
ICU Level of Service:	A
Analysis Period (min):	15

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

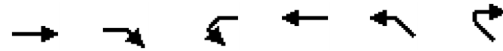


HCM Signalized Intersection Capacity Analysis  
 107: NB PWP to WB Clover Hill

Manasses HEF EA  
 10/12/2025

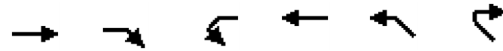


Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	220	0	0	82
Future Volume (vph)	0	0	220	0	0	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			1787			1827
Flt Permitted			0.95			1.00
Satd. Flow (perm)			1787			1827
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	239	0	0	89
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	239	0	0	89
Heavy Vehicles (%)	0%	0%	1%	0%	0%	4%
Turn Type			Prot			Prot
Protected Phases			6			4
Permitted Phases						
Actuated Green, G (s)			25.0			25.0
Effective Green, g (s)			25.0			25.0
Actuated g/C Ratio			0.42			0.42
Clearance Time (s)			5.0			5.0
Lane Grp Cap (vph)			744			761
v/s Ratio Prot			c0.13			c0.05
v/s Ratio Perm						
v/c Ratio			0.32			0.12
Uniform Delay, d1			11.8			10.7
Progression Factor			1.00			0.11
Incremental Delay, d2			1.1			0.3
Delay (s)			12.9			1.5
Level of Service			B			A
Approach Delay (s/veh)	0.0		12.9		1.5	
Approach LOS	A		B		A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay (s/veh)			9.8		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.22			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			28.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (vph)	0	0	0	146	319	0
Future Volume (vph)	0	0	0	146	319	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
<b>Fr</b>						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	1845	1752	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1845	1752	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	548			316	253	
Travel Time (s)	12.5			7.2	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	3%	0%
Adj. Flow (vph)	0	0	0	159	347	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	159	347	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	
<b>Two way Left Turn Lane</b>						
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	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.2% ICU Level of Service A
Analysis Period (min)	15



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (veh/h)	0	0	0	146	319	0
Future Volume (Veh/h)	0	0	0	146	319	0
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	159	347	0
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)	316					
pX, platoon unblocked						
vC, conflicting volume			0	159	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	159	0	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	58	100	
cM capacity (veh/h)			1636	830	1091	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NW 1</b>				
Volume Total	159	347				
Volume Left	0	347				
Volume Right	0	0				
cSH	1700	830				
Volume to Capacity	0.09	0.42				
Queue Length 95th (ft)	0	52				
Control Delay (s/veh)	0.0	12.4				
Lane LOS			B			
Approach Delay (s/veh)	0.0	12.4				
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			8.5			
Intersection Capacity Utilization			32.2%	ICU Level of Service	A	
Analysis Period (min)			15			





Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (vph)	329	1	1	1	3	330
Future Volume (vph)	329	1	1	1	3	330
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
Flt Protected		0.953			0.950	
Satd. Flow (prot)	0	1811	1900	1615	1805	1615
Flt 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)	358	1	1	1	3	359
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	359	1	1	3	359
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	34.9%
	ICU Level of Service A
Analysis Period (min)	15

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

Manasses HEF EA  
 10/12/2025



















Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↶	↶	↶	↶	↶
Traffic Volume (veh/h)	329	1	1	1	3	330
Future Volume (Veh/h)	329	1	1	1	3	330
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)	358	1	1	1	3	359
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	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 %	65	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	359	1	1	3	359	
Volume Left	358	0	0	3	0	
Volume Right	0	0	1	0	359	
cSH	1015	892	1091	1636	1700	
Volume to Capacity	0.35	0.00*	0.00*	0.00*	0.21	
Queue Length 95th (ft)	40	0	0	0	0	
Control Delay (s/veh)	10.5	9.0	8.3	7.2	0.0	
Lane LOS	B	A	A	A		
Approach Delay (s/veh)	10.5	8.7		0.1		
Approach LOS	B	A				
Intersection Summary						
Average Delay			5.3			
Intersection Capacity Utilization			34.9%		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  
 10/12/2025

















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	16	1	13	17	298	1	29	138	167	5	1
Future Volume (vph)	6	16	1	13	17	298	1	29	138	167	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.877			0.889			0.999	
Flt Protected		0.986			0.998						0.954	
Satd. Flow (prot)	0	1864	0	0	1663	0	0	1649	0	0	1811	0
Flt Permitted		0.986			0.998						0.954	
Satd. Flow (perm)	0	1864	0	0	1663	0	0	1649	0	0	1811	0
Link Speed (mph)		20			35			35			35	
Link Distance (ft)		296			4575			313			332	
Travel Time (s)		10.1			89.1			6.1			6.5	
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%	14%	0%	0%	0%	0%
Adj. Flow (vph)	7	17	1	14	18	324	1	32	150	182	5	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	356	0	0	183	0	0	188	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	50.3%
ICU Level of Service	A
Analysis Period (min)	15

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

Manasses HEF EA  
 10/12/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	16	1	13	17	298	1	29	138	167	5	1
Future Volume (Veh/h)	6	16	1	13	17	298	1	29	138	167	5	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	17	1	14	18	324	1	32	150	182	5	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	488	554	6	488	479	107	6			182		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	488	554	6	488	479	107	6			182		
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 %	98	96	100	97	96	66	100			87		
cM capacity (veh/h)	284	386	1083	429	425	953	1628			1405		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	25	356	183	188								
Volume Left	7	14	1	182								
Volume Right	1	324	150	1								
cSH	359	858	1628	1405								
Volume to Capacity	0.07	0.42	0.00*	0.13								
Queue Length 95th (ft)	6	52	0	11								
Control Delay (s/veh)	15.8	12.1	0.0	7.7								
Lane LOS	C	B	A	A								
Approach Delay (s/veh)	15.8	12.1	0.0	7.7								
Approach LOS	C	B										
Intersection Summary												
Average Delay			8.2									
Intersection Capacity Utilization			50.3%		ICU Level of Service				A			
Analysis Period (min)			15									

\* Value less than 0.01.

Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	16	1	13	17	298	1	29	138	167	5	1
Future Vol, veh/h	6	16	1	13	17	298	1	29	138	167	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	14	0	0	0	0
Mvmt Flow	7	17	1	14	18	324	1	32	150	182	5	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	488	554	6	488	479	107	6	0	0	182	0	0
Stage 1	370	370	-	109	109	-	-	-	-	-	-	-
Stage 2	118	184	-	379	370	-	-	-	-	-	-	-
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	493	443	1083	493	489	953	1628	-	-	1405	-	-
Stage 1	654	624	-	901	809	-	-	-	-	-	-	-
Stage 2	891	751	-	647	624	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	283	385	1083	428	425	953	1628	-	-	1405	-	-
Mov Cap-2 Maneuver	283	385	-	428	425	-	-	-	-	-	-	-
Stage 1	653	543	-	900	808	-	-	-	-	-	-	-
Stage 2	574	750	-	544	543	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	15.7		10.2		0		7.7	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1628	-	-	361	1049	1405	-	-
HCM Lane V/C Ratio	0.001	-	-	0.069	0.34	0.129	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	15.7	10.2	7.9	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.2	1.5	0.4	-	-

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

Manasses HEF EA  
10/12/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	157	1	0	11	19	0
Future Volume (vph)	157	1	0	11	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.850					
Fl <sub>t</sub> Protected	0.950					
Satd. Flow (prot)	1752	1615	0	1900	1900	0
Fl <sub>t</sub> Permitted	0.950					
Satd. Flow (perm)	1752	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 (%)	3%	0%	0%	0%	0%	0%
Adj. Flow (vph)	171	1	0	12	21	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	1	0	12	21	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.7%
Analysis Period (min)	15
	ICU Level of Service A

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

Manasses HEF EA  
 10/12/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	157	1	0	11	19	0
Future Volume (Veh/h)	157	1	0	11	19	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	171	1	0	12	21	0
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	33	21	21			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	33	21	21			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	100	100			
cM capacity (veh/h)	978	1062	1608			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>SB 1</b>		
Volume Total	171	1	12	21		
Volume Left	171	0	0	0		
Volume Right	0	1	0	0		
cSH	978	1062	1700	1700		
Volume to Capacity	0.17	0.00*	0.00*	0.01		
Queue Length 95th (ft)	16	0	0	0		
Control Delay (s/veh)	9.5	8.4	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	9.5		0.0	0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.9			
Intersection Capacity Utilization			18.7%	ICU Level of Service	A	
Analysis Period (min)			15			

\* Value less than 0.01.

Intersection						
Int Delay, s/veh	8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	157	1	0	11	19	0
Future Vol, veh/h	157	1	0	11	19	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	0	0	0	0	0
Mvmt Flow	171	1	0	12	21	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	33	21	-	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.43	6.2	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	-	-
Pot Cap-1 Maneuver	978	1062	0	-	-	0
Stage 1	999	-	0	-	-	0
Stage 2	1008	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	978	1062	-	-	-	-
Mov Cap-2 Maneuver	978	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	1008	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	978	1062	-
HCM Lane V/C Ratio	-	0.174	0.001	-
HCM Ctrl Dly (s/v)	-	9.5	8.4	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q (veh)	-	0.6	0	-

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

Manasses HEF EA  
10/12/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕	↕	↗
Traffic Volume (vph)	0	0	131	202	173	30
Future Volume (vph)	0	0	131	202	173	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			165
Storage Lanes	0	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.850
Fl <sub>t</sub> Protected				0.981		
Satd. Flow (prot)	0	0	0	1842	1900	1429
Fl <sub>t</sub> Permitted				0.981		
Satd. Flow (perm)	0	0	0	1842	1900	1429
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%	2%	0%	13%
Adj. Flow (vph)	0	0	142	220	188	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	362	188	33
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			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	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	33.6%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕	↕	↗
Traffic Volume (veh/h)	0	0	131	202	173	30
Future Volume (Veh/h)	0	0	131	202	173	30
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	142	220	188	33
<b>Pedestrians</b>						
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	692	188	221			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	692	188	221			
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	90			
cM capacity (veh/h)	370	859	1360			
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>SB 1</b>	<b>SB 2</b>			
Volume Total	362	188	33			
Volume Left	142	0	0			
Volume Right	0	0	33			
cSH	1360	1700	1700			
Volume to Capacity	0.10	0.11	0.02			
Queue Length 95th (ft)	9	0	0			
Control Delay (s/veh)	3.7	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	3.7	0.0				
Approach LOS						
<b>Intersection Summary</b>						
Average Delay			2.3			
Intersection Capacity Utilization			33.6%	ICU Level of Service	A	
Analysis Period (min)			15			

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

Manasses HEF EA  
10/12/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	91	100	39	42	9
Future Volume (vph)	10	91	100	39	42	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0	145			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.976	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1597	1615	1805	1900	1854	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1597	1615	1805	1900	1854	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	671			989	700	
Travel Time (s)	13.1			19.3	13.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	13%	0%	0%	0%	0%	0%
Adj. Flow (vph)	11	99	109	42	46	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	99	109	42	56	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	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.2%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
10/12/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	91	100	39	42	9
Future Volume (Veh/h)	10	91	100	39	42	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	99	109	42	46	10
<b>Pedestrians</b>						
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	311	51	56			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311	51	56			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	98	90	93			
cM capacity (veh/h)	613	1023	1562			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	
Volume Total	11	99	109	42	56	
Volume Left	11	0	109	0	0	
Volume Right	0	99	0	0	10	
cSH	613	1023	1562	1700	1700	
Volume to Capacity	0.02	0.10	0.07	0.02	0.03	
Queue Length 95th (ft)	1	8	6	0	0	
Control Delay (s/veh)	11.0	8.9	7.5	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	9.1		5.4		0.0	
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.7			
Intersection Capacity Utilization			22.2%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	10	91	100	39	42	9
Future Vol, veh/h	10	91	100	39	42	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	105	0	145	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	0	0	0	0	0
Mvmt Flow	11	99	109	42	46	10

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	311	51	56	0	0
Stage 1	51	-	-	-	-
Stage 2	260	-	-	-	-
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	659	1023	1562	-	-
Stage 1	944	-	-	-	-
Stage 2	759	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	613	1023	1562	-	-
Mov Cap-2 Maneuver	613	-	-	-	-
Stage 1	878	-	-	-	-
Stage 2	759	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.1	5.4	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1562	-	613	1023	-	-
HCM Lane V/C Ratio	0.07	-	0.018	0.097	-	-
HCM Ctrl Dly (s/v)	7.5	-	11	8.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.2	-	0.1	0.3	-	-

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	105	5	5	95	5
Future Volume (vph)	3	105	5	5	95	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.868		0.932			
Flt Protected	0.999					0.954
Satd. Flow (prot)	1648	0	1771	0	0	1795
Flt Permitted	0.999					0.954
Satd. Flow (perm)	1648	0	1771	0	0	1795
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%	1%	0%
Adj. Flow (vph)	3	114	5	5	103	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	10	0	0	108
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
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.5%		ICU Level of Service A			
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	105	5	5	95	5
Future Volume (Veh/h)	3	105	5	5	95	5
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	114	5	5	103	5
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	219	8			10	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	219	8			10	
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	89			94	
cM capacity (veh/h)	725	1081			1616	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	117	10	108			
Volume Left	3	0	103			
Volume Right	114	5	0			
cSH	1067	1700	1616			
Volume to Capacity	0.11	0.00*	0.06			
Queue Length 95th (ft)	9	0	5			
Control Delay (s/veh)	8.8	0.0	7.1			
Lane LOS	A		A			
Approach Delay (s/veh)	8.8	0.0	7.1			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.6			
Intersection Capacity Utilization			25.5%	ICU Level of Service	A	
Analysis Period (min)			15			










\* Value less than 0.01.

Intersection						
Int Delay, s/veh	7.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			4
Traffic Vol, veh/h	3	105	5	5	95	5
Future Vol, veh/h	3	105	5	5	95	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	3	114	5	5	103	5

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	219	8	0	0	10	0
Stage 1	8	-	-	-	-	-
Stage 2	211	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.209	-
Pot Cap-1 Maneuver	774	1080	-	-	1616	-
Stage 1	1020	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	724	1080	-	-	1616	-
Mov Cap-2 Maneuver	724	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	776	-	-	-	-	-










Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.8	0	7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1065	1616
HCM Lane V/C Ratio	-	-	0.11	0.064
HCM Ctrl Dly (s/v)	-	-	8.8	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.4	0.2

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	0	194	8	0	194
Future Volume (vph)	9	0	194	8	0	194
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	0.994					
Flt Protected	0.950					
Satd. Flow (prot)	1253	0	1851	0	0	1900
Flt Permitted	0.950					
Satd. Flow (perm)	1253	0	1851	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 (%)	44%	0%	0%	50%	0%	0%
Adj. Flow (vph)	10	0	211	9	0	211
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	220	0	0	211
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		
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	20.7%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	9	0	194	8	0	194
Future Volume (Veh/h)	9	0	194	8	0	194
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	211	9	0	211
<b>Pedestrians</b>						
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	427	216			220	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	427	216			220	
tC, single (s)	6.8	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.9	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	513	829			1361	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	10	220	211			
Volume Left	10	0	0			
Volume Right	0	9	0			
cSH	513	1700	1361			
Volume to Capacity	0.02	0.13	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s/veh)	12.2	0.0	0.0			
Lane LOS	B					
Approach Delay (s/veh)	12.2	0.0	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			0.3			
Intersection Capacity Utilization			20.7%		ICU Level of Service	A
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	9	0	194	8	0	194
Future Vol, veh/h	9	0	194	8	0	194
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, %	44	0	0	50	0	0
Mvmt Flow	10	0	211	9	0	211

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	427	216	0	0	220
Stage 1	216	-	-	-	-
Stage 2	211	-	-	-	-
Critical Hdwy	6.84	6.2	-	-	4.1
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.896	3.3	-	-	2.2
Pot Cap-1 Maneuver	513	829	-	-	1361
Stage 1	730	-	-	-	-
Stage 2	734	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	513	829	-	-	1361
Mov Cap-2 Maneuver	513	-	-	-	-
Stage 1	730	-	-	-	-
Stage 2	734	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.2	0	0
HCM LOS	B		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	513	1361
HCM Lane V/C Ratio	-	-	0.019	-
HCM Ctrl Dly (s/v)	-	-	12.2	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q (veh)	-	-	0.1	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	194	0	0	194
Future Volume (vph)	0	0	194	0	0	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1900	0	1900	0	0	1900
<b>Flt Permitted</b>						
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	211	0	0	211
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	211	0	0	211
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
<b>Two way Left Turn Lane</b>						
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
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.5%			ICU Level of Service A		
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	194	0	0	194
Future Volume (Veh/h)	0	0	194	0	0	194
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	211	0	0	211
<b>Pedestrians</b>						
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	422	211			211	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	422	211			211	
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)	592	834			1372	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	211	211			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1372			
Volume to Capacity	0.00	0.12	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					
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			13.5%	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	194	0	0	194
Future Vol, veh/h	0	0	194	0	0	194
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	211	0	0	211

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	422	211	0	0	211	0
Stage 1	211	-	-	-	-	-
Stage 2	211	-	-	-	-	-
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	592	834	-	-	1372	-
Stage 1	829	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	592	834	-	-	1372	-
Mov Cap-2 Maneuver	592	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	829	-	-	-	-	-

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)	-	-	-	1372
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)	76	57	58	136	137	81
Future Volume (vph)	76	57	58	136	137	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.905		0.950	
Flt Protected		0.972			0.970	
Satd. Flow (prot)	0	1847	1720	0	1751	0
Flt Permitted		0.972			0.970	
Satd. Flow (perm)	0	1847	1720	0	1751	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)	83	62	63	148	149	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	145	211	0	237	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	41.2%
	ICU Level of Service A
Analysis Period (min)	15

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

Manasses HEF EA  
 10/12/2025



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	76	57	58	136	137	81
Future Volume (Veh/h)	76	57	58	136	137	81
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)	83	62	63	148	149	88
<b>Pedestrians</b>						
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	211				365	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	211				365	137
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				75	90
cM capacity (veh/h)	1372				600	917
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NW 1</b>	<b>SW 1</b>			
Volume Total	145	211	237			
Volume Left	83	0	149			
Volume Right	0	148	88			
cSH	1372	1700	688			
Volume to Capacity	0.06	0.12	0.34			
Queue Length 95th (ft)	5	0	38			
Control Delay (s/veh)	4.7	0.0	13.0			
Lane LOS	A		B			
Approach Delay (s/veh)	4.7	0.0	13.0			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			6.3			
Intersection Capacity Utilization			41.2%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	6.3					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	76	57	58	136	137	81
Future Vol, veh/h	76	57	58	136	137	81
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	83	62	63	148	149	88




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	211	0	-	0	365
Stage 1	-	-	-	-	137
Stage 2	-	-	-	-	228
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1372	-	-	-	639
Stage 1	-	-	-	-	895
Stage 2	-	-	-	-	815
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1372	-	-	-	599
Mov Cap-2 Maneuver	-	-	-	-	599
Stage 1	-	-	-	-	839
Stage 2	-	-	-	-	815

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	4.5	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1372	-
HCM Lane V/C Ratio	-	-	0.06	-
HCM Ctrl Dly (s/v)	-	-	7.8	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.2	-




















Lanes, Volumes, Timings  
15: Gateway Blvd

Manasses HEF EA  
10/12/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	35	0	5	31	25	0	3	0	39	0	22
Future Volume (vph)	22	35	0	5	31	25	0	3	0	39	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.934							0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1805	3610	0	1805	3298	0	0	1900	0	0	1805	1615
Flt Permitted	0.950			0.950							0.950	
Satd. Flow (perm)	1805	3610	0	1805	3298	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%	4%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	24	38	0	5	34	27	0	3	0	42	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	38	0	5	61	0	0	3	0	0	42	24
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	23.4%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
15: Gateway Blvd

Manasses HEF EA  
10/12/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	35	0	5	31	25	0	3	0	39	0	22
Future Volume (Veh/h)	22	35	0	5	31	25	0	3	0	39	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	38	0	5	34	27	0	3	0	42	0	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	61			38			125	157	19	126	144	31
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	61			38			125	157	19	126	144	31
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	95	100	98
cM capacity (veh/h)	1555			1585			811	725	1061	826	737	1043
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	24	25	13	5	23	38	3	66				
Volume Left	24	0	0	5	0	0	0	42				
Volume Right	0	0	0	0	0	27	0	24				
cSH	1555	1700	1700	1585	1700	1700	725	1298				
Volume to Capacity	0.02	0.01	0.00*	0.00*	0.01	0.02	0.00*	0.05				
Queue Length 95th (ft)	1	0	0	0	0	0	0	4				
Control Delay (s/veh)	7.4	0.0	0.0	7.3	0.0	0.0	10.0	9.2				
Lane LOS	A			A			A	A				
Approach Delay (s/veh)	2.8			0.6			10.0	9.2				
Approach LOS							A	A				
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			23.4%		ICU Level of Service			A				
Analysis Period (min)			15									

\* Value less than 0.01.

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	↕
Traffic Vol, veh/h	22	35	0	5	31	25	0	3	0	39	0	22
Future Vol, veh/h	22	35	0	5	31	25	0	3	0	39	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	24	38	0	5	34	27	0	3	0	42	0	24

Major/Minor	Major1		Major2		Minor1			Minor2				
Conflicting Flow All	61	0	0	38	0	0	113	157	19	127	144	31
Stage 1	-	-	-	-	-	-	86	86	-	58	58	-
Stage 2	-	-	-	-	-	-	27	71	-	69	86	-
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	1555	-	-	1585	-	-	858	739	1061	839	751	1043
Stage 1	-	-	-	-	-	-	918	827	-	953	851	-
Stage 2	-	-	-	-	-	-	993	840	-	939	827	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1555	-	-	1585	-	-	826	726	1061	824	737	1043
Mov Cap-2 Maneuver	-	-	-	-	-	-	826	726	-	824	737	-
Stage 1	-	-	-	-	-	-	904	815	-	939	848	-
Stage 2	-	-	-	-	-	-	967	837	-	921	815	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	2.8		0.6		10		9.2	
HCM LOS					B		A	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	726	1555	-	-	1585	-	-	824	1043
HCM Lane V/C Ratio	0.004	0.015	-	-	0.003	-	-	0.051	0.023
HCM Ctrl Dly (s/v)	10	7.4	-	-	7.3	-	-	9.6	8.5
HCM Lane LOS	B	A	-	-	A	-	-	A	A
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.2	0.1



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	190	141	174	159	
Future Volume (vph)	190	141	174	159	
Ideal Flow (vphpl)	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>		0.850		0.865	
Fl <sub>t</sub> Protected					
Satd. Flow (prot)	1900	1615	1900	1644	
Fl <sub>t</sub> Permitted					
Satd. Flow (perm)	1900	1615	1900	1644	
Right Turn on Red		Yes		No	
Satd. Flow (RTOR)		153			
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)	207	153	189	173	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	207	153	189	173	
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	0.26	0.09	0.24	0.25	
Control Delay (s/veh)	12.6	0.1	11.7	12.7	
Queue Delay	0.0	0.0	0.0	0.0	

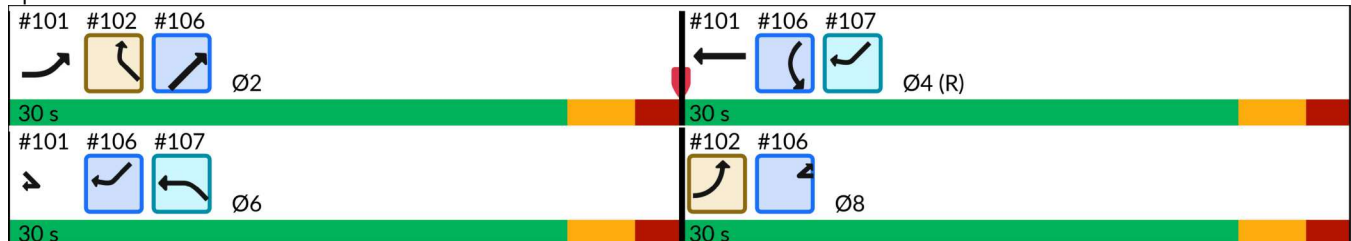


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	12.6	0.1	11.7	12.7	
LOS	B	A	B	B	
Approach Delay (s/veh)			11.7		
Approach LOS			B		
Queue Length 50th (ft)	47	0	46	39	
Queue Length 95th (ft)	87	0	84	76	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	791	1615	791	685	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.26	0.09	0.24	0.25	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.27
Intersection Signal Delay (s/veh):	9.7
Intersection LOS:	A
Intersection Capacity Utilization:	27.3%
ICU Level of Service:	A
Analysis Period (min):	15

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





Movement	EBL	EBR	WBT	SER
Lane Configurations				
Traffic Volume (vph)	190	141	174	159
Future Volume (vph)	190	141	174	159
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)	207	153	189	173
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	207	153	189	173
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	c0.11		c0.10	0.11
v/s Ratio Perm		0.09		
v/c Ratio	0.26	0.09	0.24	0.25
Uniform Delay, d1	11.5	0.0	11.3	11.4
Progression Factor	1.00	1.00	0.94	1.00
Incremental Delay, d2	0.8	0.1	0.7	0.9
Delay (s)	12.3	0.1	11.4	12.3
Level of Service	B	A	B	B
Approach Delay (s/veh)			11.4	
Approach LOS			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	27.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	157	0	0	0	0	190		
Future Volume (vph)	157	0	0	0	0	190		
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)	171	0	0	0	0	207		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	171	0	0	0	0	207		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	L NA	Right	Left	Right	Left	Right		
Median Width(ft)	12		0		0			
Link Offset(ft)	0		0		12			
Crosswalk Width(ft)	16		16		16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15	9	15	25		
Turn Type	Prot					Prot		
Protected Phases	8					2	4	6
Permitted Phases								
Minimum Split (s)	23.0					23.0	23.0	10.0
Total Split (s)	30.0					30.0	30.0	30.0
Total Split (%)	50.0%					50.0%	50%	50%
Maximum Green (s)	25.0					25.0	25.0	25.0
Yellow Time (s)	3.0					3.0	3.0	3.0
All-Red Time (s)	2.0					2.0	2.0	2.0
Lost Time Adjust (s)	0.0					0.0		
Total Lost Time (s)	5.0					5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)	7.0						7.0	
Flash Don't Walk (s)	11.0						11.0	
Pedestrian Calls (#/hr)	0						0	
Act Effct Green (s)	25.0					25.0		
Actuated g/C Ratio	0.42					0.42		
v/c Ratio	0.23					0.26		
Control Delay (s/veh)	12.3					2.1		
Queue Delay	0.0					0.0		

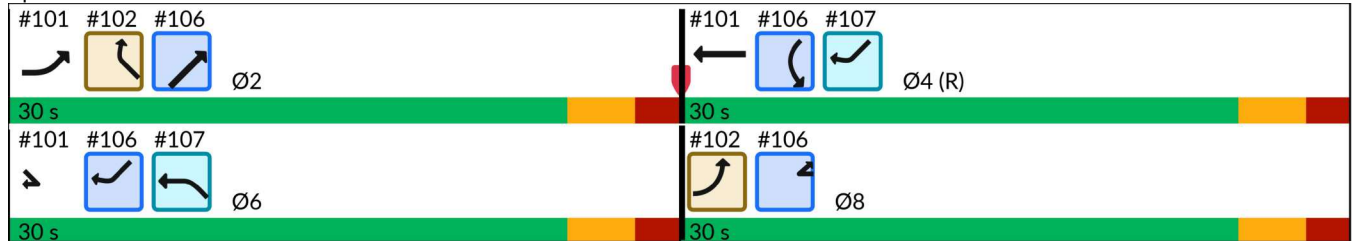


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	12.3							2.1
LOS	B							A
Approach Delay (s/veh)	12.3				2.1			
Approach LOS	B				A			
Queue Length 50th (ft)	38							3
Queue Length 95th (ft)	74							6
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	752							791
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.23							0.26

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.27
Intersection Signal Delay (s/veh):	6.7
Intersection LOS:	A
Intersection Capacity Utilization:	21.3%
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)	157	0	0	0	0	190
Future Volume (vph)	157	0	0	0	0	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0					5.0
Lane Util. Factor	1.00					1.00
Frt	1.00					1.00
Flt Protected	0.95					1.00
Satd. Flow (prot)	1805					1900
Flt Permitted	0.95					1.00
Satd. Flow (perm)	1805					1900
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	0	0	0	0	207
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	171	0	0	0	0	207
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot					Prot
Protected Phases	8					2
Permitted Phases						
Actuated Green, G (s)	25.0					25.0
Effective Green, g (s)	25.0					25.0
Actuated g/C Ratio	0.42					0.42
Clearance Time (s)	5.0					5.0
Lane Grp Cap (vph)	752					791
v/s Ratio Prot	c0.09					c0.11
v/s Ratio Perm						
v/c Ratio	0.23					0.26
Uniform Delay, d1	11.3					11.5
Progression Factor	1.00					0.11
Incremental Delay, d2	0.7					0.8
Delay (s)	12.0					2.1
Level of Service	B					A
Approach Delay (s/veh)	12.0		0.0		2.1	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	21.3%	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	44	0	0	141
Future Volume (vph)	0	0	44	0	0	141
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 <sub>t</sub>						0.865
Fl <sub>t</sub> Protected			0.950			
Satd. Flow (prot)	0	0	1805	0	0	1644
Fl <sub>t</sub> Permitted			0.950			
Satd. Flow (perm)	0	0	1805	0	0	1644
Link Speed (mph)	30		30		30	
Link Distance (ft)	720		202		211	
Travel Time (s)	16.4		4.6		4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	48	0	0	153
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	48	0	0	153
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	26.2%
	ICU Level of Service A
Analysis Period (min)	15



Movement	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations			↶			↷
Traffic Volume (veh/h)	0	0	44	0	0	141
Future Volume (Veh/h)	0	0	44	0	0	141
Sign Control	Free		Yield		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	48	0	0	153
<b>Pedestrians</b>						
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			153	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			153	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 %			94	100	100	
cM capacity (veh/h)			843	1091	1636	
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NE 1</b>				
Volume Total	48	153				
Volume Left	48	0				
Volume Right	0	0				
cSH	843	1700				
Volume to Capacity	0.06	0.09				
Queue Length 95th (ft)	5	0				
Control Delay (s/veh)	9.5	0.0				
Lane LOS	A					
Approach Delay (s/veh)	9.5	0.0				
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			2.3			
Intersection Capacity Utilization			26.2%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	53	199	87	194
Future Volume (vph)	53	199	87	194
Ideal Flow (vphpl)	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.865			0.850
Flt Protected				
Satd. Flow (prot)	1508	1900	1900	1583
Flt Permitted				
Satd. Flow (perm)	1508	1900	1900	1583
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				211
Link Speed (mph)		25		
Link Distance (ft)		134		
Travel Time (s)		3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	0%	2%
Adj. Flow (vph)	58	216	95	211
Shared Lane Traffic (%)				
Lane Group Flow (vph)	58	216	95	211
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Right	Left	Left	Right
Median Width(ft)		12		
Link Offset(ft)		-6		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	9
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Minimum Split (s)	23.0	23.0	23.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Walk Time (s)	7.0		7.0	
Flash Don't Walk (s)	11.0		11.0	
Pedestrian Calls (#/hr)	0		0	
Act Effct Green (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
v/c Ratio	0.09	0.27	0.12	0.27
Control Delay (s/veh)	11.2	10.5	11.3	3.0
Queue Delay	0.0	0.0	0.0	0.0

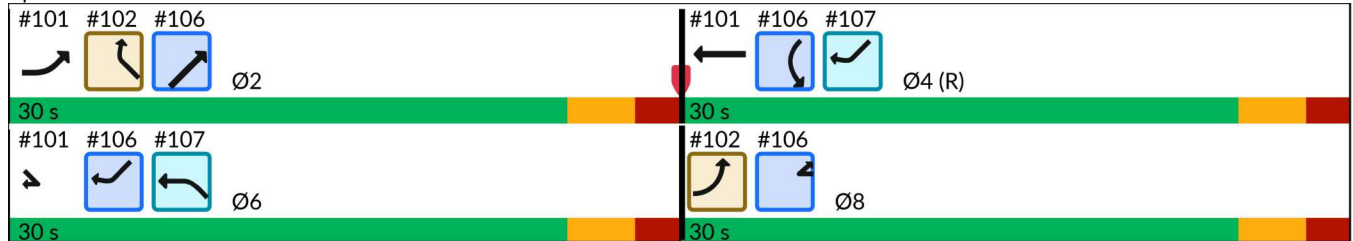


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.2	10.5	11.3	3.0
LOS	B	B	B	A
Approach Delay (s/veh)	10.5			
Approach LOS	B			
Queue Length 50th (ft)	12	44	20	0
Queue Length 95th (ft)	31	77	44	32
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	628	791	791	782
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.27	0.12	0.27

**Intersection Summary**

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.27
Intersection Signal Delay (s/veh):	8.0
Intersection LOS:	A
Intersection Capacity Utilization:	23.0%
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)	53	199	87	194
Future Volume (vph)	53	199	87	194
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	0.87	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1508	1900	1900	1583
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1508	1900	1900	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	216	95	211
RTOR Reduction (vph)	0	0	0	123
Lane Group Flow (vph)	58	216	95	88
Heavy Vehicles (%)	9%	0%	0%	2%
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Actuated Green, G (s)	25.0	25.0	25.0	25.0
Effective Green, g (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	628	791	791	659
v/s Ratio Prot	0.04	c0.11	c0.05	0.06
v/s Ratio Perm				
v/c Ratio	0.09	0.27	0.12	0.13
Uniform Delay, d1	10.6	11.5	10.7	10.8
Progression Factor	1.00	0.81	1.00	1.00
Incremental Delay, d2	0.3	0.8	0.3	0.4
Delay (s)	10.9	10.2	11.1	11.2
Level of Service	B	B	B	B
Approach Delay (s/veh)		10.2		
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	0.20		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	23.0%	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	131	0	0	87		
Future Volume (vph)	0	0	131	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	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	142	0	0	95		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	142	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			0.19			0.12		
Control Delay (s/veh)			12.0			1.5		
Queue Delay			0.0			0.0		

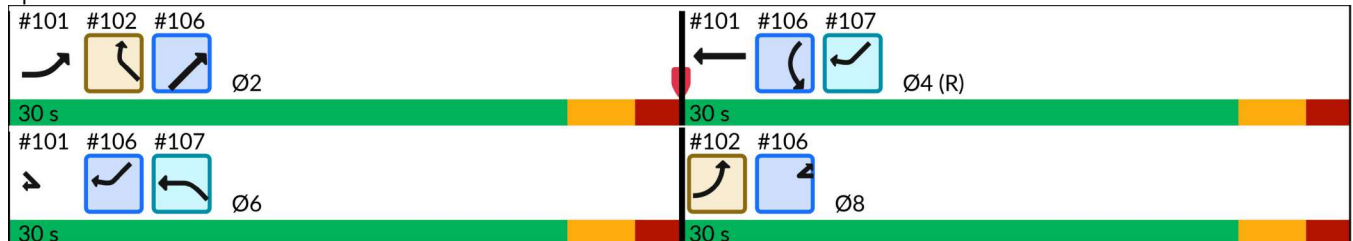


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			12.0			1.5		
LOS			B			A		
Approach Delay (s/veh)			12.0		1.5			
Approach LOS			B		A			
Queue Length 50th (ft)			31			1		
Queue Length 95th (ft)			63			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			752			791		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.19			0.12		

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.27
Intersection Signal Delay (s/veh):	7.8
Intersection LOS:	A
Intersection Capacity Utilization:	22.9%
ICU Level of Service:	A
Analysis Period (min):	15

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



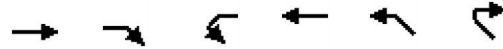
HCM Signalized Intersection Capacity Analysis  
 107: NB PWP to WB Clover Hill

Manasses HEF EA  
 10/12/2025



Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	131	0	0	87
Future Volume (vph)	0	0	131	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)			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	142	0	0	95
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	142	0	0	95
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			c0.08			c0.05
v/s Ratio Perm						
v/c Ratio			0.19			0.12
Uniform Delay, d1			11.1			10.7
Progression Factor			1.00			0.11
Incremental Delay, d2			0.6			0.3
Delay (s)			11.6			1.4
Level of Service			B			A
Approach Delay (s/veh)	0.0		11.6		1.4	
Approach LOS	A		B		A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay (s/veh)			7.6		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.15			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			22.9%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (vph)	0	0	0	194	148	0
Future Volume (vph)	0	0	0	194	148	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
<b>Fr</b>						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	1863	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1863	1805	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	548			316	253	
Travel Time (s)	12.5			7.2	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%
Adj. Flow (vph)	0	0	0	211	161	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	211	161	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	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

**Intersection Summary**

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



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (veh/h)	0	0	0	194	148	0
Future Volume (Veh/h)	0	0	0	194	148	0
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	211	161	0
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)	316					
pX, platoon unblocked						
vC, conflicting volume			0	211	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	211	0	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	79	100	
cM capacity (veh/h)			1636	782	1091	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NW 1</b>				
Volume Total	211	161				
Volume Left	0	161				
Volume Right	0	0				
cSH	1700	782				
Volume to Capacity	0.12	0.21				
Queue Length 95th (ft)	0	19				
Control Delay (s/veh)	0.0	10.8				
Lane LOS			B			
Approach Delay (s/veh)	0.0	10.8				
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			4.7			
Intersection Capacity Utilization			34.4%	ICU Level of Service	A	
Analysis Period (min)			15			

