














Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↑	↗	↖	↗
Traffic Volume (vph)	301	4	0	29	70	594
Future Volume (vph)	301	4	0	29	70	594
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	1537	1900	1615	1805	1568
Fl <sub>t</sub> Permitted		0.953			0.950	
Satd. Flow (perm)	0	1537	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 (%)	18%	0%	0%	0%	0%	3%
Adj. Flow (vph)	327	4	0	32	76	646
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	331	0	32	76	646
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	40.1%
	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)	301	4	0	29	70	594
Future Volume (Veh/h)	301	4	0	29	70	594
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)	327	4	0	32	76	646
<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	152	152	152	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	152	152	152	0	0	
tC, single (s)	7.3	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 %	55	99	100	97	95	
cM capacity (veh/h)	730	709	709	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	331	0	32	76	646	
Volume Left	327	0	0	76	0	
Volume Right	0	0	32	0	646	
cSH	730	1700	1091	1636	1700	
Volume to Capacity	0.45	0.00	0.03	0.05	0.38	
Queue Length 95th (ft)	59	0	2	4	0	
Control Delay (s/veh)	14.0	0.0	8.4	7.3	0.0	
Lane LOS	B	A	A	A		
Approach Delay (s/veh)	14.0	8.4		0.8		
Approach LOS	B	A				
<b>Intersection Summary</b>						
Average Delay			5.0			
Intersection Capacity Utilization			40.1%	ICU Level of Service	A	
Analysis Period (min)			15			

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

















Manassas HEF EA  
 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	15	42	292	4	32	110	56	7	1
Future Volume (vph)	1	0	1	15	42	292	4	32	110	56	7	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.932			0.887			0.898			0.998	
Flt Protected		0.976			0.998			0.999			0.958	
Satd. Flow (prot)	0	1728	0	0	1668	0	0	1626	0	0	1788	0
Flt Permitted		0.976			0.998			0.999			0.958	
Satd. Flow (perm)	0	1728	0	0	1668	0	0	1626	0	0	1788	0
Link Speed (mph)		20			35			35			35	
Link Distance (ft)		296			4575			313			332	
Travel Time (s)		10.1			89.1			6.1			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	22%	0%	0%	14%	0%
Adj. Flow (vph)	1	0	1	16	46	317	4	35	120	61	8	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	379	0	0	159	0	0	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.3%
	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)	1	0	1	15	42	292	4	32	110	56	7	1
Future Volume (Veh/h)	1	0	1	15	42	292	4	32	110	56	7	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	1	16	46	317	4	35	120	61	8	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	257	294	9	235	234	95	9			155		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	257	294	9	235	234	95	9			155		
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	67	100			96		
cM capacity (veh/h)	430	593	1079	699	640	964	1624			1438		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	379	159	70								
Volume Left	1	16	4	61								
Volume Right	1	317	120	1								
cSH	614	895	1624	1438								
Volume to Capacity	0.00*	0.42	0.00*	0.04								
Queue Length 95th (ft)	0	53	0	3								
Control Delay (s/veh)	10.9	11.9	0.2	6.7								
Lane LOS	B	B	A	A								
Approach Delay (s/veh)	10.9	11.9	0.2	6.7								
Approach LOS	B	B										
Intersection Summary												
Average Delay			8.3									
Intersection Capacity Utilization			43.3%		ICU Level of Service				A			
Analysis Period (min)			15									

\* Value less than 0.01.

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	15	42	292	4	32	110	56	7	1
Future Vol, veh/h	1	0	1	15	42	292	4	32	110	56	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	1	0	22	0	0	14	0
Mvmt Flow	1	0	1	16	46	317	4	35	120	61	8	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	257	294	9	234	234	95	9	0	0	155	0	0
Stage 1	131	131	-	103	103	-	-	-	-	-	-	-
Stage 2	126	163	-	131	131	-	-	-	-	-	-	-
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	700	620	1079	725	670	964	1624	-	-	1438	-	-
Stage 1	877	792	-	908	814	-	-	-	-	-	-	-
Stage 2	883	767	-	877	792	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	428	591	1079	699	639	964	1624	-	-	1438	-	-
Mov Cap-2 Maneuver	428	591	-	699	639	-	-	-	-	-	-	-
Stage 1	874	758	-	905	812	-	-	-	-	-	-	-
Stage 2	557	765	-	838	758	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.9	9.7	0.2	6.7
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1624	-	-	613	1152	1438	-	-
HCM Lane V/C Ratio	0.003	-	-	0.004	0.329	0.042	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	10.9	9.7	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	1.5	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)	139	1	0	7	24	0
Future Volume (vph)	139	1	0	7	24	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.850					
Fl <sub>t</sub> Protected	0.950					
Satd. Flow (prot)	1719	1615	0	1900	1827	0
Fl <sub>t</sub> Permitted	0.950					
Satd. Flow (perm)	1719	1615	0	1900	1827	0
Link Speed (mph)	20			35	35	
Link Distance (ft)	207			735	313	
Travel Time (s)	7.1			14.3	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	0%	0%	0%	4%	0%
Adj. Flow (vph)	151	1	0	8	26	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	151	1	0	8	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.7%
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)	139	1	0	7	24	0
Future Volume (Veh/h)	139	1	0	7	24	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	151	1	0	8	26	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	34	26	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	26	26			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	100	100			
cM capacity (veh/h)	972	1056	1601			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>SB 1</b>		
Volume Total	151	1	8	26		
Volume Left	151	0	0	0		
Volume Right	0	1	0	0		
cSH	972	1056	1700	1700		
Volume to Capacity	0.16	0.00*	0.00*	0.02		
Queue Length 95th (ft)	14	0	0	0		
Control Delay (s/veh)	9.4	8.4	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	9.4		0.0	0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	7.7					
Intersection Capacity Utilization	17.7%			ICU Level of Service	A	
Analysis Period (min)	15					

\* Value less than 0.01.

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	139	1	0	7	24	0
Future Vol, veh/h	139	1	0	7	24	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	0	0	0	4	0
Mvmt Flow	151	1	0	8	26	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	34	26	-	0	-	0
Stage 1	26	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.45	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	972	1056	0	-	-	0
Stage 1	989	-	0	-	-	0
Stage 2	1007	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	972	1056	-	-	-	-
Mov Cap-2 Maneuver	972	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	1007	-	-	-	-	-

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)	-	972	1056	-
HCM Lane V/C Ratio	-	0.155	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	176	149	64	43
Future Volume (vph)	0	0	176	149	64	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				0.974		
Satd. Flow (prot)	0	0	0	1784	1863	1442
Fl <sub>t</sub> Permitted				0.974		
Satd. Flow (perm)	0	0	0	1784	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	191	162	68	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	353	68	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	27.6%			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	176	149	64	43
Future Volume (Veh/h)	0	0	176	149	64	43
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	191	162	68	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	612	68	115			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	612	68	115			
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)	400	1001	1480			
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>SB 1</b>	<b>SB 2</b>			
Volume Total	353	68	47			
Volume Left	191	0	0			
Volume Right	0	0	47			
cSH	1480	1700	1700			
Volume to Capacity	0.13	0.04	0.03			
Queue Length 95th (ft)	11	0	0			
Control Delay (s/veh)	4.7	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	4.7	0.0				
Approach LOS						
<b>Intersection Summary</b>						
Average Delay			3.6			
Intersection Capacity Utilization			27.6%	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)	46	73	48	69	72	43
Future Volume (vph)	46	73	48	69	72	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0	145			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.949	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1612	1615	1752	1827	1740	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1612	1615	1752	1827	1740	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	671			989	700	
Travel Time (s)	13.1			19.3	13.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	12%	0%	3%	4%	4%	3%
Adj. Flow (vph)	50	79	52	75	78	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	79	52	75	125	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	19.3%			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)	46	73	48	69	72	43
Future Volume (Veh/h)	46	73	48	69	72	43
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	50	79	52	75	78	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	281	102	125			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	281	102	125			
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	92	96			
cM capacity (veh/h)	664	959	1455			
<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	50	79	52	75	125	
Volume Left	50	0	52	0	0	
Volume Right	0	79	0	0	47	
cSH	664	959	1455	1700	1700	
Volume to Capacity	0.08	0.08	0.04	0.04	0.07	
Queue Length 95th (ft)	6	7	3	0	0	
Control Delay (s/veh)	10.9	9.1	7.6	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	9.8		3.1		0.0	
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.3			
Intersection Capacity Utilization			19.3%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	46	73	48	69	72	43
Future Vol, veh/h	46	73	48	69	72	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	105	0	145	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	12	0	3	4	4	3
Mvmt Flow	50	79	52	75	78	47

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	281	102	125	0	0
Stage 1	102	-	-	-	-
Stage 2	179	-	-	-	-
Critical Hdwy	6.52	6.2	4.13	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-
Follow-up Hdwy	3.608	3.3	2.227	-	-
Pot Cap-1 Maneuver	688	959	1455	-	-
Stage 1	898	-	-	-	-
Stage 2	828	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	663	959	1455	-	-
Mov Cap-2 Maneuver	663	-	-	-	-
Stage 1	866	-	-	-	-
Stage 2	828	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.8	3.1	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1455	-	663	959	-	-
HCM Lane V/C Ratio	0.036	-	0.075	0.083	-	-
HCM Ctrl Dly (s/v)	7.6	-	10.9	9.1	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q (veh)	0.1	-	0.2	0.3	-	-

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

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	49	28	28	94	28
Future Volume (vph)	14	49	28	28	94	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.895		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)	15	53	30	30	102	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	0	60	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	1.04	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	23.8%		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)	14	49	28	28	94	28
Future Volume (Veh/h)	14	49	28	28	94	28
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	53	30	30	102	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	279	45			60	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	279	45			60	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	98	95			93	
cM capacity (veh/h)	667	1031			1512	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	68	60	132			
Volume Left	15	0	102			
Volume Right	53	30	0			
cSH	920	1700	1512			
Volume to Capacity	0.07	0.04	0.07			
Queue Length 95th (ft)	6	0	5			
Control Delay (s/veh)	9.2	0.0	6.0			
Lane LOS	A		A			
Approach Delay (s/veh)	9.2	0.0	6.0			
Approach LOS	A					
Intersection Summary						
Average Delay			5.4			
Intersection Capacity Utilization		23.8%		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	W	W	T	T	S	S
Traffic Vol, veh/h	14	49	28	28	94	28
Future Vol, veh/h	14	49	28	28	94	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	7	0
Mvmt Flow	15	53	30	30	102	30

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	279	45	0	0	60	0
Stage 1	45	-	-	-	-	-
Stage 2	234	-	-	-	-	-
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	715	1031	-	-	1512	-
Stage 1	983	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	666	1031	-	-	1512	-
Mov Cap-2 Maneuver	666	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	754	-	-	-	-	-










Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.2	0	5.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	919	1512
HCM Lane V/C Ratio	-	-	0.075	0.068
HCM Ctrl Dly (s/v)	-	-	9.2	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.2	0.2

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	136	13	0	104
Future Volume (vph)	4	0	136	13	0	104
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>	0.988					
Fl <sub>t</sub> Protected	0.950					
Satd. Flow (prot)	902	0	1765	0	0	1845
Fl <sub>t</sub> Permitted	0.950					
Satd. Flow (perm)	902	0	1765	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	148	14	0	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	162	0	0	113
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	17.9%			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	136	13	0	104
Future Volume (Veh/h)	4	0	136	13	0	104
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	148	14	0	113
<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	268	155			162	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	268	155			162	
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)	553	896			1429	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	4	162	113			
Volume Left	4	0	0			
Volume Right	0	14	0			
cSH	553	1700	1429			
Volume to Capacity	0.00*	0.10	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s/veh)	11.6	0.0	0.0			
Lane LOS	B					
Approach Delay (s/veh)	11.6	0.0	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			0.2			
Intersection Capacity Utilization			17.9%	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	136	13	0	104
Future Vol, veh/h	4	0	136	13	0	104
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	148	14	0	113

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	268	155	0	0	162
Stage 1	155	-	-	-	-
Stage 2	113	-	-	-	-
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	553	896	-	-	1429
Stage 1	682	-	-	-	-
Stage 2	717	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	553	896	-	-	1429
Mov Cap-2 Maneuver	553	-	-	-	-
Stage 1	682	-	-	-	-
Stage 2	717	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.6	0	0
HCM LOS	B		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	553	1429
HCM Lane V/C Ratio	-	-	0.008	-
HCM Ctrl Dly (s/v)	-	-	11.6	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	136	0	1	104
Future Volume (vph)	0	0	136	0	1	104
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	1827	0	0	1845
<b>Flt Permitted</b>						
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	148	0	1	113
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	148	0	0	114
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	10.5%			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	136	0	1	104
Future Volume (Veh/h)	0	0	136	0	1	104
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	148	0	1	113
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	263	148			148	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	263	148			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			100	
cM capacity (veh/h)	730	904			1446	
<b>Direction, Lane #</b>						
	WB 1	NB 1	SB 1			
Volume Total	0	148	114			
Volume Left	0	0	1			
Volume Right	0	0	0			
cSH	1700	1700	1446			
Volume to Capacity	0.00	0.09	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			10.5%	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						
Traffic Vol, veh/h	0	0	136	0	1	104
Future Vol, veh/h	0	0	136	0	1	104
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	148	0	1	113

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	263	148	0	0	148
Stage 1	148	-	-	-	-
Stage 2	115	-	-	-	-
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	730	904	-	-	1446
Stage 1	884	-	-	-	-
Stage 2	915	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	729	904	-	-	1446
Mov Cap-2 Maneuver	729	-	-	-	-
Stage 1	884	-	-	-	-
Stage 2	914	-	-	-	-

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)	-	-	-	1446
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)	40	105	117	19	0	0
Future Volume (vph)	40	105	117	19	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 <sub>t</sub>		0.981				
Fl <sub>t</sub> Protected		0.986				
Satd. Flow (prot)	0	1833	1787	0	1900	0
Fl <sub>t</sub> Permitted		0.986				
Satd. Flow (perm)	0	1833	1787	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)	43	114	127	21	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	157	148	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	21.7%
	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)	40	105	117	19	0	0
Future Volume (Veh/h)	40	105	117	19	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)	43	114	127	21	0	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	148				338	138
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	148				338	138
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)	1446				642	916
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NW 1</b>	<b>SW 1</b>			
Volume Total	157	148	0			
Volume Left	43	0	0			
Volume Right	0	21	0			
cSH	1446	1700	1700			
Volume to Capacity	0.03	0.09	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			
<b>Intersection Summary</b>						
Average Delay			1.2			
Intersection Capacity Utilization		21.7%		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	40	105	117	19	0	0
Future Vol, veh/h	40	105	117	19	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	43	114	127	21	0	0




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	148	0	-	0	338
Stage 1	-	-	-	-	138
Stage 2	-	-	-	-	200
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	1446	-	-	-	662
Stage 1	-	-	-	-	894
Stage 2	-	-	-	-	838
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1446	-	-	-	641
Mov Cap-2 Maneuver	-	-	-	-	641
Stage 1	-	-	-	-	865
Stage 2	-	-	-	-	838

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)	-	-	1446	-
HCM Lane V/C Ratio	-	-	0.03	-
HCM Ctrl Dly (s/v)	-	-	7.6	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.1	-




















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)	24	24	3	1	89	41	0	0	3	15	0	64
Future Volume (vph)	24	24	3	1	89	41	0	0	3	15	0	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.952			0.865				0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1703	3207	0	1805	3318	0	0	1644	0	0	1656	1509
Flt Permitted	0.950			0.950							0.950	
Satd. Flow (perm)	1703	3207	0	1805	3318	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)	26	26	3	1	97	45	0	0	3	16	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	29	0	1	142	0	0	3	0	0	16	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	24.6%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
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)	24	24	3	1	89	41	0	0	3	15	0	64				
Future Volume (Veh/h)	24	24	3	1	89	41	0	0	3	15	0	64				
Sign Control	Free			Free			Stop			Stop						
Grade	0%			0%			0%			0%						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
Hourly flow rate (vph)	26	26	3	1	97	45	0	0	3	16	0	70				
Pedestrians																
Lane Width (ft)																
Walking Speed (ft/s)																
Percent Blockage																
Right turn flare (veh)																
4																
Median type																
None																
Median storage (veh)																
Upstream signal (ft)																
pX, platoon unblocked																
vC, conflicting volume	142			29			165			224			71			
vC1, stage 1 conf vol																
vC2, stage 2 conf vol																
vCu, unblocked vol	142			29			165			224			71			
tC, single (s)	4.2			4.1			7.5			6.5			7.0			
tC, 2 stage (s)																
tF (s)	2.3			2.2			3.5			4.0			3.4			
p0 queue free %	98			100			100			100			93			
cM capacity (veh/h)	1410			1597			721			666			961			
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1								
Volume Total	26	17	12	1	65	77	3	86								
Volume Left	26	0	0	1	0	0	0	16								
Volume Right	0	0	3	0	0	45	3	70								
cSH	1410	1700	1700	1597	1700	1700	1068	1181								
Volume to Capacity	0.02	0.01	0.00*	0.00*	0.04	0.05	0.00*	0.07								
Queue Length 95th (ft)	1	0	0	0	0	0	0	6								
Control Delay (s/veh)	7.6	0.0	0.0	7.3	0.0	0.0	8.4	9.2								
Lane LOS	A			A			A			A						
Approach Delay (s/veh)	3.6			0.1			8.4			9.2						
Approach LOS							A			A						
Intersection Summary																
Average Delay	3.6															
Intersection Capacity Utilization	24.6%			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	24	24	3	1	89	41	0	0	3	15	0	64
Future Vol, veh/h	24	24	3	1	89	41	0	0	3	15	0	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	12	0	0	2	7	0	0	0	9	0	7
Mvmt Flow	26	26	3	1	97	45	0	0	3	16	0	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	142	0	0	29	0	0	131	224	15	187	203	71
Stage 1	-	-	-	-	-	-	80	80	-	122	122	-
Stage 2	-	-	-	-	-	-	51	144	-	65	81	-
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	1410	-	-	1597	-	-	834	678	1067	738	697	961
Stage 1	-	-	-	-	-	-	925	832	-	849	799	-
Stage 2	-	-	-	-	-	-	962	782	-	918	832	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1410	-	-	1597	-	-	762	665	1067	725	684	961
Mov Cap-2 Maneuver	-	-	-	-	-	-	762	665	-	725	684	-
Stage 1	-	-	-	-	-	-	908	817	-	834	798	-
Stage 2	-	-	-	-	-	-	892	781	-	898	817	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	3.6			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)	1067	1410	-	-	1597	-	-	725	961
HCM Lane V/C Ratio	0.003	0.019	-	-	0.001	-	-	0.022	0.072
HCM Ctrl Dly (s/v)	8.4	7.6	-	-	7.3	-	-	10.1	9
HCM Lane LOS	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0	0.1	-	-	0	-	-	0.1	0.2



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	170	159	375	290	
Future Volume (vph)	170	159	375	290	
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)	1367	1524	1845	1580	
Fl <sub>t</sub> Permitted					
Satd. Flow (perm)	1367	1524	1845	1580	
Right Turn on Red		Yes		No	
Satd. Flow (RTOR)		173			
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 (%)	39%	6%	3%	4%	
Adj. Flow (vph)	185	173	408	315	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	185	173	408	315	
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	0.33	0.11	0.53	0.48	
Control Delay (s/veh)	13.8	0.2	15.6	15.8	
Queue Delay	0.0	0.0	0.0	0.0	

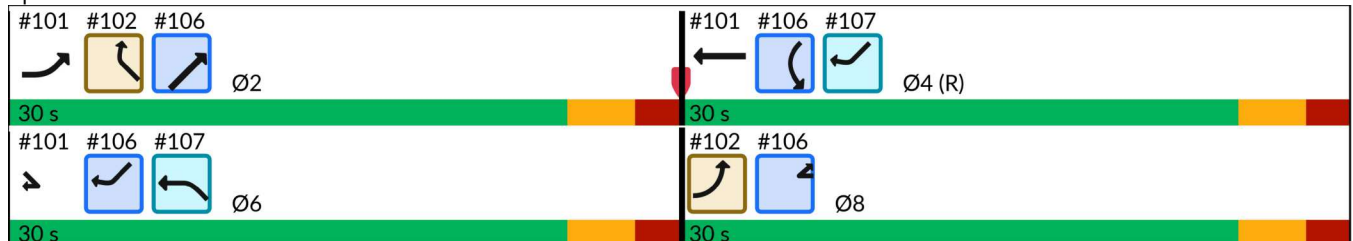


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	13.8	0.2	15.6	15.8	
LOS	B	A	B	B	
Approach Delay (s/veh)			15.6		
Approach LOS			B		
Queue Length 50th (ft)	43	0	127	79	
Queue Length 95th (ft)	85	0	198	142	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	569	1524	768	658	
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	0.33	0.11	0.53	0.48	

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:	0.53
Intersection Signal Delay (s/veh):	12.9
Intersection LOS:	B
Intersection Capacity Utilization:	46.0%
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)	170	159	375	290
Future Volume (vph)	170	159	375	290
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)	1367	1524	1845	1580
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1367	1524	1845	1580
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	173	408	315
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	185	173	408	315
Heavy Vehicles (%)	39%	6%	3%	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)	569	1524	768	658
v/s Ratio Prot	0.14		c0.22	c0.20
v/s Ratio Perm		0.11		
v/c Ratio	0.33	0.11	0.53	0.48
Uniform Delay, d1	11.8	0.0	13.1	12.8
Progression Factor	1.00	1.00	0.96	1.00
Incremental Delay, d2	1.5	0.2	2.4	2.5
Delay (s)	13.3	0.2	15.1	15.2
Level of Service	B	A	B	B
Approach Delay (s/veh)			15.1	
Approach LOS			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)		12.4	HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio		0.50	
Actuated Cycle Length (s)		60.0	Sum of lost time (s) 10.0
Intersection Capacity Utilization		46.0%	ICU Level of Service A
Analysis Period (min)		15	

c Critical Lane Group



Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	56	0	0	0	0	170		
Future Volume (vph)	56	0	0	0	0	170		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected	0.950							
Satd. Flow (prot)	1492	0	0	0	0	1367		
Flt Permitted	0.950							
Satd. Flow (perm)	1492	0	0	0	0	1367		
Right Turn on Red	No	No		No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	246		392		85			
Travel Time (s)	6.7		10.7		2.3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	21%	0%	0%	0%	0%	39%		
Adj. Flow (vph)	61	0	0	0	0	185		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	61	0	0	0	0	185		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	L NA	Right	Left	Right	Left	Right		
Median Width(ft)	12		0		0			
Link Offset(ft)	0		0		12			
Crosswalk Width(ft)	16		16		16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15	9	15	25		
Turn Type	Prot					Prot		
Protected Phases	8					2	4	6
Permitted Phases								
Minimum Split (s)	23.0					23.0	23.0	10.0
Total Split (s)	30.0					30.0	30.0	30.0
Total Split (%)	50.0%					50.0%	50%	50%
Maximum Green (s)	25.0					25.0	25.0	25.0
Yellow Time (s)	3.0					3.0	3.0	3.0
All-Red Time (s)	2.0					2.0	2.0	2.0
Lost Time Adjust (s)	0.0					0.0		
Total Lost Time (s)	5.0					5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)	7.0						7.0	
Flash Don't Walk (s)	11.0						11.0	
Pedestrian Calls (#/hr)	0						0	
Act Effct Green (s)	25.0					25.0		
Actuated g/C Ratio	0.42					0.42		
v/c Ratio	0.10					0.33		
Control Delay (s/veh)	11.3					2.8		
Queue Delay	0.0					0.0		

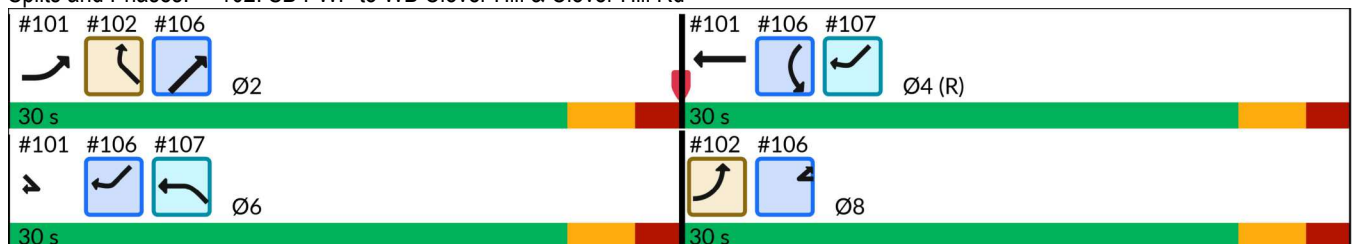


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	11.3							2.8
LOS	B							A
Approach Delay (s/veh)	11.3				2.8			
Approach LOS	B				A			
Queue Length 50th (ft)	13							3
Queue Length 95th (ft)	32							5
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	621							569
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.10							0.33

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:	0.53
Intersection Signal Delay (s/veh):	4.9
Intersection LOS:	A
Intersection Capacity Utilization:	24.2%
ICU Level of Service:	A
Analysis Period (min):	15

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





Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	56	0	0	0	0	170
Future Volume (vph)	56	0	0	0	0	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0					5.0
Lane Util. Factor	1.00					1.00
Fr <sub>t</sub>	1.00					1.00
Fl <sub>t</sub> Protected	0.95					1.00
Satd. Flow (prot)	1492					1367
Fl <sub>t</sub> Permitted	0.95					1.00
Satd. Flow (perm)	1492					1367
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	0	0	0	0	185
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	61	0	0	0	0	185
Heavy Vehicles (%)	21%	0%	0%	0%	0%	39%
Turn Type	Prot					Prot
Protected Phases	8					2
Permitted Phases						
Actuated Green, G (s)	25.0					25.0
Effective Green, g (s)	25.0					25.0
Actuated g/C Ratio	0.42					0.42
Clearance Time (s)	5.0					5.0
Lane Grp Cap (vph)	621					569
v/s Ratio Prot	c0.04					c0.14
v/s Ratio Perm						
v/c Ratio	0.10					0.33
Uniform Delay, d <sub>1</sub>	10.6					11.8
Progression Factor	1.00					0.11
Incremental Delay, d <sub>2</sub>	0.3					1.5
Delay (s)	11.0					2.7
Level of Service	B					A
Approach Delay (s/veh)	11.0		0.0		2.7	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	62	0	0	159
Future Volume (vph)	0	0	62	0	0	159
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	1556	0	0	1550
Fl <sub>t</sub> Permitted			0.950			
Satd. Flow (perm)	0	0	1556	0	0	1550
Link Speed (mph)	30		30		30	
Link Distance (ft)	720		202		211	
Travel Time (s)	16.4		4.6		4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	16%	0%	0%	6%
Adj. Flow (vph)	0	0	67	0	0	173
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	67	0	0	173
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	39.7%
	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	159
Future Volume (Veh/h)	0	0	62	0	0	159
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	173
<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			173	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			173	0	0	
tC, single (s)			6.6	6.2	4.1	
tC, 2 stage (s)						
tF (s)			3.6	3.3	2.2	
p0 queue free %			91	100	100	
cM capacity (veh/h)			786	1091	1636	
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NE 1</b>				
Volume Total	67	173				
Volume Left	67	0				
Volume Right	0	0				
cSH	786	1700				
Volume to Capacity	0.09	0.10				
Queue Length 95th (ft)	7	0				
Control Delay (s/veh)	10.0	0.0				
Lane LOS	B					
Approach Delay (s/veh)	10.0	0.0				
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			2.8			
Intersection Capacity Utilization			39.7%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	50	72	115	255
Future Volume (vph)	50	72	115	255
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)	1417	1638	1743	1538
Flt Permitted				
Satd. Flow (perm)	1417	1638	1743	1538
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				277
Link Speed (mph)		25		
Link Distance (ft)		134		
Travel Time (s)		3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	16%	16%	9%	5%
Adj. Flow (vph)	54	78	125	277
Shared Lane Traffic (%)				
Lane Group Flow (vph)	54	78	125	277
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Right	Left	Left	Right
Median Width(ft)		12		
Link Offset(ft)		-6		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	9
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Minimum Split (s)	23.0	23.0	23.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Walk Time (s)	7.0		7.0	
Flash Don't Walk (s)	11.0		11.0	
Pedestrian Calls (#/hr)	0		0	
Act Effct Green (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
v/c Ratio	0.09	0.11	0.17	0.35
Control Delay (s/veh)	11.2	8.6	11.8	3.1
Queue Delay	0.0	0.0	0.0	0.0

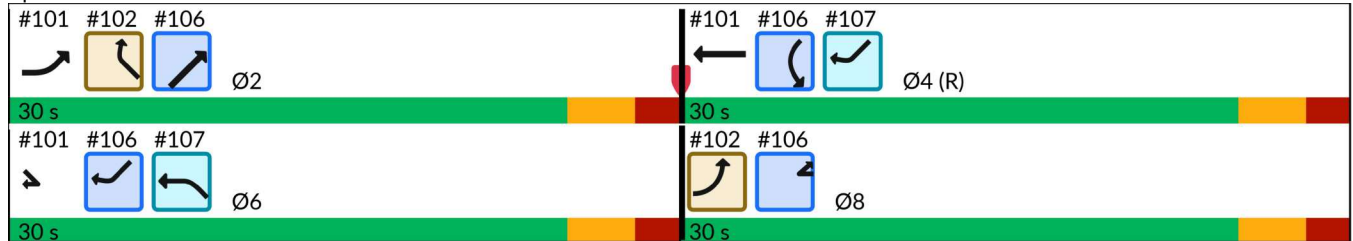


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.2	8.6	11.8	3.1
LOS	B	A	B	A
Approach Delay (s/veh)	8.6			
Approach LOS	A			
Queue Length 50th (ft)	11	12	27	0
Queue Length 95th (ft)	30	27	56	37
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	590	682	726	802
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.11	0.17	0.35

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.53
Intersection Signal Delay (s/veh):	6.8
Intersection LOS:	A
Intersection Capacity Utilization:	20.0%
ICU Level of Service:	A
Analysis Period (min):	15

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





Movement	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	50	72	115	255
Future Volume (vph)	50	72	115	255
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	0.87	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1417	1638	1743	1538
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1417	1638	1743	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	78	125	277
RTOR Reduction (vph)	0	0	0	162
Lane Group Flow (vph)	54	78	125	115
Heavy Vehicles (%)	16%	16%	9%	5%
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Actuated Green, G (s)	25.0	25.0	25.0	25.0
Effective Green, g (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	590	682	726	640
v/s Ratio Prot	0.04	0.05	c0.07	c0.08
v/s Ratio Perm				
v/c Ratio	0.09	0.11	0.17	0.18
Uniform Delay, d1	10.6	10.7	11.0	11.0
Progression Factor	1.00	0.75	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.5	0.6
Delay (s)	10.9	8.3	11.5	11.7
Level of Service	B	A	B	B
Approach Delay (s/veh)		8.3		
Approach LOS		A		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	0	0	322	0	0	115		
Future Volume (vph)	0	0	322	0	0	115		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected			0.950					
Satd. Flow (prot)	0	0	1736	0	0	1743		
Flt Permitted			0.950					
Satd. Flow (perm)	0	0	1736	0	0	1743		
Right Turn on Red		No	No	No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	390		186		73			
Travel Time (s)	10.6		5.1		2.0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	0%	0%	4%	0%	0%	9%		
Adj. Flow (vph)	0	0	350	0	0	125		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	350	0	0	125		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Right		
Median Width(ft)	0		12		0			
Link Offset(ft)	0		0		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			0.48			0.17		
Control Delay (s/veh)			15.6			1.7		
Queue Delay			0.0			0.0		

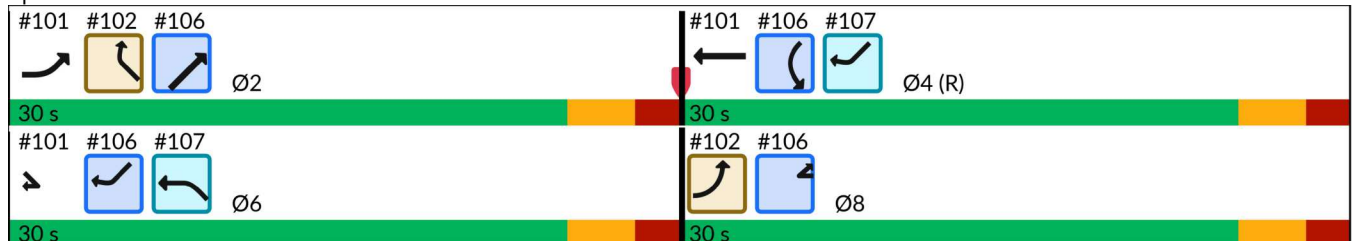


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			15.6			1.7		
LOS			B			A		
Approach Delay (s/veh)			15.6		1.7			
Approach LOS			B		A			
Queue Length 50th (ft)			88			2		
Queue Length 95th (ft)			153			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			723			726		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.48			0.17		

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.53
Intersection Signal Delay (s/veh):	12.0
Intersection LOS:	B
Intersection Capacity Utilization:	35.1%
ICU Level of Service:	A
Analysis Period (min):	15

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



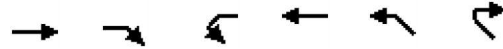
HCM Signalized Intersection Capacity Analysis  
 107: NB PWP to WB Clover Hill

Manasses HEF EA  
 10/12/2025



Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	322	0	0	115
Future Volume (vph)	0	0	322	0	0	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			1736			1743
Flt Permitted			0.95			1.00
Satd. Flow (perm)			1736			1743
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	350	0	0	125
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	350	0	0	125
Heavy Vehicles (%)	0%	0%	4%	0%	0%	9%
Turn Type			Prot			Prot
Protected Phases			6			4
Permitted Phases						
Actuated Green, G (s)			25.0			25.0
Effective Green, g (s)			25.0			25.0
Actuated g/C Ratio			0.42			0.42
Clearance Time (s)			5.0			5.0
Lane Grp Cap (vph)			723			726
v/s Ratio Prot			c0.20			c0.07
v/s Ratio Perm						
v/c Ratio			0.48			0.17
Uniform Delay, d1			12.8			11.0
Progression Factor			1.00			0.10
Incremental Delay, d2			2.3			0.5
Delay (s)			15.1			1.7
Level of Service			B			A
Approach Delay (s/veh)	0.0		15.1		1.7	
Approach LOS	A		B		A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay (s/veh)			11.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.33			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			35.1%		ICU Level of Service	A
Analysis Period (min)			15			

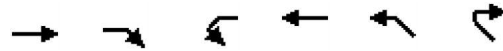
c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (vph)	0	0	0	255	154	0
Future Volume (vph)	0	0	0	255	154	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	1262	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1810	1262	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%	43%	0%
Adj. Flow (vph)	0	0	0	277	167	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	277	167	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	37.6%
	ICU Level of Service A
Analysis Period (min)	15



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (veh/h)	0	0	0	255	154	0
Future Volume (Veh/h)	0	0	0	255	154	0
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	277	167	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			277	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0			277	0	
tC, single (s)	4.1			6.8	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.9	3.3	
p0 queue free %	100			74	100	
cM capacity (veh/h)	1636			634	1091	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NW 1</b>				
Volume Total	277	167				
Volume Left	0	167				
Volume Right	0	0				
cSH	1700	634				
Volume to Capacity	0.16	0.26				
Queue Length 95th (ft)	0	26				
Control Delay (s/veh)	0.0	12.7				
Lane LOS			B			
Approach Delay (s/veh)	0.0	12.7				
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay	4.8					
Intersection Capacity Utilization	37.6%			ICU Level of Service	A	
Analysis Period (min)	15					

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

Manasses HEF EA  
 10/12/2025














Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↖	↗	↕	↗
Traffic Volume (vph)	662	1	6	69	0	490
Future Volume (vph)	662	1	6	69	0	490
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)	720	1	7	75	0	533
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	721	7	75	0	533
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	47.7%
	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)	662	1	6	69	0	490
Future Volume (Veh/h)	662	1	6	69	0	490
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)	720	1	7	75	0	533
<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	4	0	0	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4	0	0	0	0	
tC, single (s)	7.1	6.5	6.5	6.3	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.4	2.2	
p0 queue free %	24	100	99	93	100	
cM capacity (veh/h)	944	900	900	1073	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	721	7	75	0	533	
Volume Left	720	0	0	0	0	
Volume Right	0	0	75	0	533	
cSH	944	900	1073	1700	1700	
Volume to Capacity	0.76	0.00*	0.07	0.00	0.31	
Queue Length 95th (ft)	191	1	6	0	0	
Control Delay (s/veh)	20.0	9.0	8.6	0.0	0.0	
Lane LOS	C	A	A			
Approach Delay (s/veh)	20.0	8.6		0.0		
Approach LOS	C	A				
<b>Intersection Summary</b>						
Average Delay			11.3			
Intersection Capacity Utilization			47.7%	ICU Level of Service	A	
Analysis Period (min)			15			

\* Value less than 0.01.

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

















Manassas HEF EA  
 10/12/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	37	6	6	38	404	3	56	327	92	10	0
Future Volume (vph)	12	37	6	6	38	404	3	56	327	92	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.984			0.878			0.886				
Fl <sub>t</sub> Protected		0.989			0.999						0.957	
Satd. Flow (prot)	0	1849	0	0	1652	0	0	1666	0	0	1754	0
Fl <sub>t</sub> Permitted		0.989			0.999						0.957	
Satd. Flow (perm)	0	1849	0	0	1652	0	0	1666	0	0	1754	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%	7%	0%	3%	10%	0%
Adj. Flow (vph)	13	40	7	7	41	439	3	61	355	100	11	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	487	0	0	419	0	0	111	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	66.6%
	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)	12	37	6	6	38	404	3	56	327	92	10	0
Future Volume (Veh/h)	12	37	6	6	38	404	3	56	327	92	10	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	40	7	7	41	439	3	61	355	100	11	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	476	633	11	483	456	239	11			416		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	476	633	11	483	456	239	11			416		
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 %	93	89	99	98	91	45	100			91		
cM capacity (veh/h)	198	364	1076	422	459	803	1621			1138		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	60	487	419	111								
Volume Left	13	7	3	100								
Volume Right	7	439	355	0								
cSH	329	746	1621	1138								
Volume to Capacity	0.18	0.65	0.00*	0.09								
Queue Length 95th (ft)	16	122	0	7								
Control Delay (s/veh)	18.3	18.4	0.1	7.7								
Lane LOS	C	C	A	A								
Approach Delay (s/veh)	18.3	18.4	0.1	7.7								
Approach LOS	C	C										
Intersection Summary												
Average Delay			10.2									
Intersection Capacity Utilization			66.6%	ICU Level of Service						C		
Analysis Period (min)			15									

\* Value less than 0.01.

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	37	6	6	38	404	3	56	327	92	10	0
Future Vol, veh/h	12	37	6	6	38	404	3	56	327	92	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	1	0	7	0	3	10	0
Mvmt Flow	13	40	7	7	41	439	3	61	355	100	11	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	476	633	11	480	456	239	11	0	0	416	0	0
Stage 1	211	211	-	245	245	-	-	-	-	-	-	-
Stage 2	265	422	-	235	211	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.227	-	-
Pot Cap-1 Maneuver	503	400	1076	499	504	802	1621	-	-	1138	-	-
Stage 1	796	731	-	763	707	-	-	-	-	-	-	-
Stage 2	745	592	-	773	731	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	197	364	1076	423	458	802	1621	-	-	1138	-	-
Mov Cap-2 Maneuver	197	364	-	423	458	-	-	-	-	-	-	-
Stage 1	794	667	-	761	705	-	-	-	-	-	-	-
Stage 2	316	590	-	658	667	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	18.5		13.8		0.1		7.6	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1621	-	-	327	889	1138	-	-
HCM Lane V/C Ratio	0.002	-	-	0.183	0.548	0.088	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	18.5	13.8	8.5	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.7	3.4	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)	361	0	0	25	21	0
Future Volume (vph)	361	0	0	25	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<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)	392	0	0	27	23	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	392	0	0	27	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<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	30.0% 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)	361	0	0	25	21	0
Future Volume (Veh/h)	361	0	0	25	21	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	392	0	0	27	23	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	50	23	23			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	50	23	23			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	59	100	100			
cM capacity (veh/h)	962	1060	1605			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>SB 1</b>		
Volume Total	392	0	27	23		
Volume Left	392	0	0	0		
Volume Right	0	0	0	0		
cSH	962	1700	1700	1700		
Volume to Capacity	0.41	0.00	0.02	0.01		
Queue Length 95th (ft)	50	0	0	0		
Control Delay (s/veh)	11.3	0.0	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s/veh)	11.3	0.0		0.0		
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	10.0					
Intersection Capacity Utilization	30.0%		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	361	0	0	25	21	0
Future Vol, veh/h	361	0	0	25	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	4	5	0
Mvmt Flow	392	0	0	27	23	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	50	23	-	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.41	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	962	1060	0	-	-	0
Stage 1	1002	-	0	-	-	0
Stage 2	998	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	962	1060	-	-	-	-
Mov Cap-2 Maneuver	962	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	998	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	962	-	-
HCM Lane V/C Ratio	-	0.408	-	-
HCM Ctrl Dly (s/v)	-	11.3	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	310	162	101	44
Future Volume (vph)	0	0	310	162	101	44
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				0.968		
Satd. Flow (prot)	0	0	0	1808	1827	1482
Fl <sub>t</sub> Permitted				0.968		
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	337	176	110	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	513	110	48
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	35.7%			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	310	162	101	44
Future Volume (Veh/h)	0	0	310	162	101	44
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	337	176	110	48
<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	960	110	158			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	960	110	158			
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	76			
cM capacity (veh/h)	220	949	1434			
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>SB 1</b>	<b>SB 2</b>			
Volume Total	513	110	48			
Volume Left	337	0	0			
Volume Right	0	0	48			
cSH	1434	1700	1700			
Volume to Capacity	0.24	0.06	0.03			
Queue Length 95th (ft)	23	0	0			
Control Delay (s/veh)	6.2	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	6.2	0.0				
Approach LOS						
<b>Intersection Summary</b>						
Average Delay			4.7			
Intersection Capacity Utilization			35.7%	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)	28	60	106	106	51	36
Future Volume (vph)	28	60	106	106	51	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0	145			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.944	
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)	30	65	115	115	55	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	65	115	115	94	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	22.5%			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)	28	60	106	106	51	36
Future Volume (Veh/h)	28	60	106	106	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)	30	65	115	115	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	420	75	94			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	420	75	94			
tC, single (s)	6.6	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	94	93	92			
cM capacity (veh/h)	523	979	1506			
<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	30	65	115	115	94	
Volume Left	30	0	115	0	0	
Volume Right	0	65	0	0	39	
cSH	523	979	1506	1700	1700	
Volume to Capacity	0.06	0.07	0.08	0.07	0.06	
Queue Length 95th (ft)	5	5	6	0	0	
Control Delay (s/veh)	12.3	8.9	7.6	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	10.0		3.8		0.0	
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			4.3			
Intersection Capacity Utilization			22.5%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	28	60	106	106	51	36
Future Vol, veh/h	28	60	106	106	51	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	105	0	145	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	15	5	1	3	3	19
Mvmt Flow	30	65	115	115	55	39










Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	420	75	94	0	0
Stage 1	75	-	-	-	-
Stage 2	345	-	-	-	-
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	566	978	1506	-	-
Stage 1	916	-	-	-	-
Stage 2	689	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	523	978	1506	-	-
Mov Cap-2 Maneuver	523	-	-	-	-
Stage 1	846	-	-	-	-
Stage 2	689	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10	3.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1506	-	523	978	-	-
HCM Lane V/C Ratio	0.077	-	0.058	0.067	-	-
HCM Ctrl Dly (s/v)	7.6	-	12.3	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

Manasses HEF EA  
10/12/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	113	39	11	54	39
Future Volume (vph)	39	113	39	11	54	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899		0.970			
Flt Protected	0.987					0.972
Satd. Flow (prot)	1637	0	1843	0	0	1764
Flt Permitted	0.987					0.972
Satd. Flow (perm)	1637	0	1843	0	0	1764
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%	8%	0%
Adj. Flow (vph)	42	123	42	12	59	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	165	0	54	0	0	101
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	27.5%			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)	39	113	39	11	54	39
Future Volume (Veh/h)	39	113	39	11	54	39
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	123	42	12	59	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	208	48			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208	48			54	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	94	88			96	
cM capacity (veh/h)	754	1015			1514	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	165	54	101			
Volume Left	42	0	59			
Volume Right	123	12	0			
cSH	933	1700	1514			
Volume to Capacity	0.18	0.03	0.04			
Queue Length 95th (ft)	16	0	3			
Control Delay (s/veh)	9.7	0.0	4.5			
Lane LOS	A		A			
Approach Delay (s/veh)	9.7	0.0	4.5			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			6.4			
Intersection Capacity Utilization			27.5%		ICU Level of Service	A
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	6.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	39	113	39	11	54	39
Future Vol, veh/h	39	113	39	11	54	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	0	8	0
Mvmt Flow	42	123	42	12	59	42

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	208	48	0	0	54
Stage 1	48	-	-	-	-
Stage 2	160	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.18
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.272
Pot Cap-1 Maneuver	785	1015	-	-	1514
Stage 1	980	-	-	-	-
Stage 2	874	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	754	1015	-	-	1514
Mov Cap-2 Maneuver	754	-	-	-	-
Stage 1	980	-	-	-	-
Stage 2	839	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.7	0	4.3
HCM LOS	A		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	932	1514
HCM Lane V/C Ratio	-	-	0.177	0.039
HCM Ctrl Dly (s/v)	-	-	9.7	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	147	15	0	131
Future Volume (vph)	15	0	147	15	0	131
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>	0.988					
Fl <sub>t</sub> Protected	0.950					
Satd. Flow (prot)	1421	0	1785	0	0	1845
Fl <sub>t</sub> Permitted	0.950					
Satd. Flow (perm)	1421	0	1785	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	160	16	0	142
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	176	0	0	142
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	18.6%			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)	15	0	147	15	0	131
Future Volume (Veh/h)	15	0	147	15	0	131
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	160	16	0	142
<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	310	168			176	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	310	168			176	
tC, single (s)	6.7	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.7	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	634	881			1412	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	16	176	142			
Volume Left	16	0	0			
Volume Right	0	16	0			
cSH	634	1700	1412			
Volume to Capacity	0.03	0.10	0.00			
Queue Length 95th (ft)	2	0	0			
Control Delay (s/veh)	10.8	0.0	0.0			
Lane LOS	B					
Approach Delay (s/veh)	10.8	0.0	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			0.5			
Intersection Capacity Utilization			18.6%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	15	0	147	15	0	131
Future Vol, veh/h	15	0	147	15	0	131
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	160	16	0	142

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	310	168	0	0	176
Stage 1	168	-	-	-	-
Stage 2	142	-	-	-	-
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	634	881	-	-	1412
Stage 1	805	-	-	-	-
Stage 2	827	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	634	881	-	-	1412
Mov Cap-2 Maneuver	634	-	-	-	-
Stage 1	805	-	-	-	-
Stage 2	827	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.8	0	0
HCM LOS	B		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	634	1412
HCM Lane V/C Ratio	-	-	0.026	-
HCM Ctrl Dly (s/v)	-	-	10.8	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	147	0	1	131
Future Volume (vph)	0	1	147	0	1	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.865					
Flt Protected						
Satd. Flow (prot)	1644	0	1845	0	0	1845
Flt 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	160	0	1	142
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	160	0	0	143
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	17.7%			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	147	0	1	131
Future Volume (Veh/h)	0	1	147	0	1	131
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	160	0	1	142
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	304	160			160	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	304	160			160	
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)	692	890			1432	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	1	160	143			
Volume Left	0	0	1			
Volume Right	1	0	0			
cSH	890	1700	1432			
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					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			17.7%		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						
Traffic Vol, veh/h	0	1	147	0	1	131
Future Vol, veh/h	0	1	147	0	1	131
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	160	0	1	142

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	304	160	0	0	160	0
Stage 1	160	-	-	-	-	-
Stage 2	144	-	-	-	-	-
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	692	890	-	-	1432	-
Stage 1	874	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	691	890	-	-	1432	-
Mov Cap-2 Maneuver	691	-	-	-	-	-
Stage 1	874	-	-	-	-	-
Stage 2	887	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.1	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	890	1432
HCM Lane V/C Ratio	-	-	0.001	0.001
HCM Ctrl Dly (s/v)	-	-	9.1	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0	0



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	111	148	0	20	65
Future Volume (vph)	0	111	148	0	20	65
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>					0.897	
Fl <sub>t</sub> Protected					0.988	
Satd. Flow (prot)	0	1827	1845	0	1684	0
Fl <sub>t</sub> Permitted					0.988	
Satd. Flow (perm)	0	1827	1845	0	1684	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	121	161	0	22	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	121	161	0	93	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.6%
Analysis Period (min)	15
	ICU Level of Service A

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	111	148	0	20	65
Future Volume (Veh/h)	0	111	148	0	20	65
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	121	161	0	22	71
<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	161				282	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	161				282	161
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	92
cM capacity (veh/h)	1430				712	889
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NW 1</b>	<b>SW 1</b>			
Volume Total	121	161	93			
Volume Left	0	0	22			
Volume Right	0	0	71			
cSH	1430	1700	840			
Volume to Capacity	0.00	0.09	0.11			
Queue Length 95th (ft)	0	0	9			
Control Delay (s/veh)	0.0	0.0	9.8			
Lane LOS			A			
Approach Delay (s/veh)	0.0	0.0	9.8			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			2.4			
Intersection Capacity Utilization			19.6%	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	111	148	0	20	65
Future Vol, veh/h	0	111	148	0	20	65
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	121	161	0	22	71




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	161	0	-	0	282 161
Stage 1	-	-	-	-	161 -
Stage 2	-	-	-	-	121 -
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	1430	-	-	-	712 889
Stage 1	-	-	-	-	873 -
Stage 2	-	-	-	-	909 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1430	-	-	-	712 889
Mov Cap-2 Maneuver	-	-	-	-	712 -
Stage 1	-	-	-	-	873 -
Stage 2	-	-	-	-	909 -

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1430	- 840
HCM Lane V/C Ratio	-	-	-	- 0.11
HCM Ctrl Dly (s/v)	-	-	0	- 9.8
HCM Lane LOS	-	-	A	- A
HCM 95th %tile Q (veh)	-	-	0	- 0.4

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)	83	79	1	15	30	45	3	4	13	50	6	46
Future Volume (vph)	83	79	1	15	30	45	3	4	13	50	6	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.910			0.910				0.850
Flt Protected	0.950			0.950				0.993			0.958	
Satd. Flow (prot)	1805	3370	0	1517	3170	0	0	1600	0	0	1728	1524
Flt Permitted	0.950			0.950				0.993			0.958	
Satd. Flow (perm)	1805	3370	0	1517	3170	0	0	1600	0	0	1728	1524
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1357			2771			405			407	
Travel Time (s)		26.4			54.0			11.0			11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	7%	0%	19%	9%	0%	0%	0%	11%	6%	0%	6%
Adj. Flow (vph)	90	86	1	16	33	49	3	4	14	54	7	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	87	0	16	82	0	0	21	0	0	61	50
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
15: Gateway Blvd

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)	83	79	1	15	30	45	3	4	13	50	6	46
Future Volume (Veh/h)	83	79	1	15	30	45	3	4	13	50	6	46
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	86	1	16	33	49	3	4	14	54	7	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	82			87			344	381	44	329	357	41
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	82			87			344	381	44	329	357	41
tC, single (s)	4.1			4.5			7.5	6.5	7.1	7.6	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.4			3.5	4.0	3.4	3.6	4.0	3.4
p0 queue free %	94			99			99	99	99	90	99	95
cM capacity (veh/h)	1528			1391			527	516	989	548	533	1008
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	90	57	30	16	22	60	21	111				
Volume Left	90	0	0	16	0	0	3	54				
Volume Right	0	0	1	0	0	49	14	50				
cSH	1528	1700	1700	1391	1700	1700	761	994				
Volume to Capacity	0.06	0.03	0.02	0.01	0.01	0.04	0.03	0.11				
Queue Length 95th (ft)	5	0	0	1	0	0	2	9				
Control Delay (s/veh)	7.5	0.0	0.0	7.6	0.0	0.0	9.9	10.8				
Lane LOS	A			A			A	B				
Approach Delay (s/veh)	3.8			1.2			9.9	10.8				
Approach LOS							A	B				
Intersection Summary												
Average Delay			5.4									
Intersection Capacity Utilization			27.7%		ICU Level of Service			A				
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕			↕	↗
Traffic Vol, veh/h	83	79	1	15	30	45	3	4	13	50	6	46
Future Vol, veh/h	83	79	1	15	30	45	3	4	13	50	6	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	19	9	0	0	0	11	6	0	6
Mvmt Flow	90	86	1	16	33	49	3	4	14	54	7	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	87	0	0	319	381	44	315	357	41
Stage 1	-	-	-	-	-	-	267	267	-	90	90	-
Stage 2	-	-	-	-	-	-	52	114	-	225	267	-
Critical Hdwy	4.1	-	-	4.48	-	-	7.5	6.5	7.12	7.62	6.5	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.62	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.62	5.5	-
Follow-up Hdwy	2.2	-	-	2.39	-	-	3.5	4	3.41	3.56	4	3.36
Pot Cap-1 Maneuver	1528	-	-	1391	-	-	615	555	988	604	572	1008
Stage 1	-	-	-	-	-	-	721	692	-	896	824	-
Stage 2	-	-	-	-	-	-	960	805	-	746	692	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1528	-	-	1391	-	-	548	516	988	560	532	1008
Mov Cap-2 Maneuver	-	-	-	-	-	-	548	516	-	560	532	-
Stage 1	-	-	-	-	-	-	678	651	-	843	814	-
Stage 2	-	-	-	-	-	-	895	795	-	687	651	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	3.8			1.3			9.9			10.7		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	758	1528	-	-	1391	-	-	557	1008
HCM Lane V/C Ratio	0.029	0.059	-	-	0.012	-	-	0.109	0.05
HCM Ctrl Dly (s/v)	9.9	7.5	-	-	7.6	-	-	12.3	8.8
HCM Lane LOS	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0.1	0.2	-	-	0	-	-	0.4	0.2



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	366	365	244	246	
Future Volume (vph)	366	365	244	246	
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)	1845	1583	1863	1565	
Fl <sub>t</sub> Permitted					
Satd. Flow (perm)	1845	1583	1863	1565	
Right Turn on Red		Yes		No	
Satd. Flow (RTOR)		397			
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 (%)	3%	2%	2%	5%	
Adj. Flow (vph)	398	397	265	267	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	398	397	265	267	
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	0.52	0.25	0.34	0.41	
Control Delay (s/veh)	16.0	0.4	13.4	14.7	
Queue Delay	0.0	0.0	0.0	0.0	

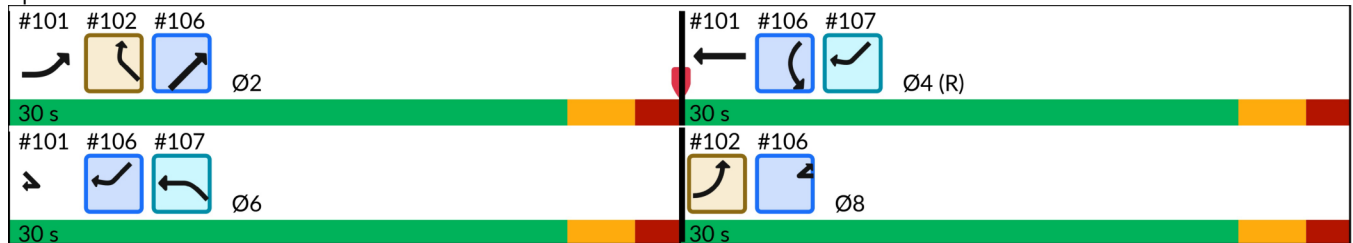


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	16.0	0.4	13.4	14.7	
LOS	B	A	B	B	
Approach Delay (s/veh)			13.4		
Approach LOS			B		
Queue Length 50th (ft)	102	0	76	65	
Queue Length 95th (ft)	173	0	129	119	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	768	1583	776	652	
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	0.52	0.25	0.34	0.41	

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:	0.52
Intersection Signal Delay (s/veh):	10.6
Intersection LOS:	B
Intersection Capacity Utilization:	40.6%
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)	366	365	244	246
Future Volume (vph)	366	365	244	246
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)	1845	1583	1863	1565
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1845	1583	1863	1565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	398	397	265	267
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	398	397	265	267
Heavy Vehicles (%)	3%	2%	2%	5%
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)	768	1583	776	652
v/s Ratio Prot	c0.22		c0.14	0.17
v/s Ratio Perm		0.25		
v/c Ratio	0.52	0.25	0.34	0.41
Uniform Delay, d1	13.0	0.0	11.9	12.3
Progression Factor	1.00	1.00	0.99	1.00
Incremental Delay, d2	2.5	0.4	1.2	1.9
Delay (s)	15.5	0.4	13.0	14.2
Level of Service	B	A	B	B
Approach Delay (s/veh)			13.0	
Approach LOS			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	217	0	0	0	0	366		
Future Volume (vph)	217	0	0	0	0	366		
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	1845		
Flt Permitted	0.950							
Satd. Flow (perm)	1787	0	0	0	0	1845		
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%	3%		
Adj. Flow (vph)	228	0	0	0	0	398		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	228	0	0	0	0	398		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	L NA	Right	Left	Right	Left	Right		
Median Width(ft)	12		0		0			
Link Offset(ft)	0		0		12			
Crosswalk Width(ft)	16		16		16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15	9	15	25		
Turn Type	Prot					Prot		
Protected Phases	8					2	4	6
Permitted Phases								
Minimum Split (s)	23.0					23.0	23.0	10.0
Total Split (s)	30.0					30.0	30.0	30.0
Total Split (%)	50.0%					50.0%	50%	50%
Maximum Green (s)	25.0					25.0	25.0	25.0
Yellow Time (s)	3.0					3.0	3.0	3.0
All-Red Time (s)	2.0					2.0	2.0	2.0
Lost Time Adjust (s)	0.0					0.0		
Total Lost Time (s)	5.0					5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)	7.0						7.0	
Flash Don't Walk (s)	11.0						11.0	
Pedestrian Calls (#/hr)	0						0	
Act Effct Green (s)	25.0					25.0		
Actuated g/C Ratio	0.42					0.42		
v/c Ratio	0.31					0.52		
Control Delay (s/veh)	13.1					3.5		
Queue Delay	0.0					0.0		

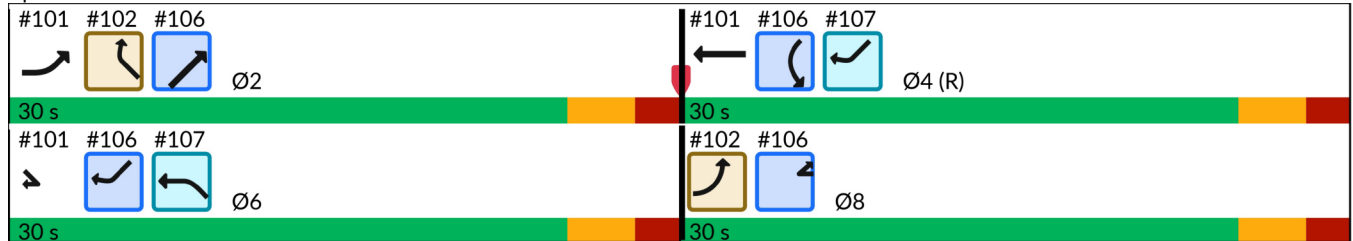


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	13.1							3.5
LOS	B							A
Approach Delay (s/veh)	13.1				3.5			
Approach LOS	B				A			
Queue Length 50th (ft)	53							6
Queue Length 95th (ft)	96							9
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	744							768
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.31							0.52

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:	0.52
Intersection Signal Delay (s/veh):	7.0
Intersection LOS:	A
Intersection Capacity Utilization:	29.8%
ICU Level of Service:	A
Analysis Period (min):	15

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





Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations	↖					↗
Traffic Volume (vph)	217	0	0	0	0	366
Future Volume (vph)	217	0	0	0	0	366
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					1845
Flt Permitted	0.95					1.00
Satd. Flow (perm)	1787					1845
Peak-hour factor, PHF	0.95	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	0	0	0	0	398
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	228	0	0	0	0	398
Heavy Vehicles (%)	1%	0%	0%	0%	0%	3%
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					768
v/s Ratio Prot	c0.13					c0.22
v/s Ratio Perm						
v/c Ratio	0.31					0.52
Uniform Delay, d1	11.7					13.0
Progression Factor	1.00					0.10
Incremental Delay, d2	1.1					2.2
Delay (s)	12.8					3.4
Level of Service	B					A
Approach Delay (s/veh)	12.8		0.0		3.4	
Approach LOS	B		A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	69	0	0	365
Future Volume (vph)	0	0	69	0	0	365
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	1611
Fl <sub>t</sub> Permitted			0.950			
Satd. Flow (perm)	0	0	1752	0	0	1611
Link Speed (mph)	30		30		30	
Link Distance (ft)	720		202		211	
Travel Time (s)	16.4		4.6		4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	3%	0%	0%	2%
Adj. Flow (vph)	0	0	75	0	0	397
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	75	0	0	397
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	44.4%
	ICU Level of Service A
Analysis Period (min)	15



Movement	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	0	0	69	0	0	365
Future Volume (Veh/h)	0	0	69	0	0	365
Sign Control	Free		Yield		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	75	0	0	397
<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			397	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			397	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 %			88	100	100	
cM capacity (veh/h)			606	1091	1636	
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NE 1</b>				
Volume Total	75	397				
Volume Left	75	0				
Volume Right	0	0				
cSH	606	1700				
Volume to Capacity	0.12	0.23				
Queue Length 95th (ft)	11	0				
Control Delay (s/veh)	11.8	0.0				
Lane LOS	B					
Approach Delay (s/veh)	11.8	0.0				
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			1.9			
Intersection Capacity Utilization			44.4%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations	↗	↑	↖	↗
Traffic Volume (vph)	70	257	90	161
Future Volume (vph)	70	257	90	161
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)	1315	1881	1827	1553
Flt Permitted				
Satd. Flow (perm)	1315	1881	1827	1553
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				175
Link Speed (mph)		25		
Link Distance (ft)		134		
Travel Time (s)		3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	1%	4%	4%
Adj. Flow (vph)	76	279	98	175
Shared Lane Traffic (%)				
Lane Group Flow (vph)	76	279	98	175
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Right	Left	Left	Right
Median Width(ft)		12		
Link Offset(ft)		-6		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	9
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Minimum Split (s)	23.0	23.0	23.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Walk Time (s)	7.0		7.0	
Flash Don't Walk (s)	11.0		11.0	
Pedestrian Calls (#/hr)	0		0	
Act Effct Green (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
v/c Ratio	0.14	0.36	0.13	0.23
Control Delay (s/veh)	11.8	12.6	11.4	3.1
Queue Delay	0.0	0.0	0.0	0.0

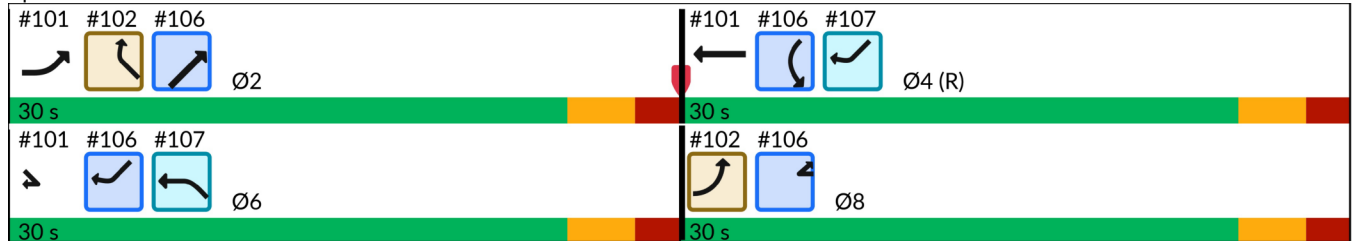


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.8	12.6	11.4	3.1
LOS	B	B	B	A
Approach Delay (s/veh)	12.6			
Approach LOS	B			
Queue Length 50th (ft)	16	52	21	0
Queue Length 95th (ft)	39	114	46	30
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	547	783	761	749
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.36	0.13	0.23

**Intersection Summary**

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.52
Intersection Signal Delay (s/veh):	9.7
Intersection LOS:	A
Intersection Capacity Utilization:	26.2%
ICU Level of Service:	A
Analysis Period (min):	15

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





Movement	WBR	NET	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	70	257	90	161
Future Volume (vph)	70	257	90	161
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	0.87	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1315	1881	1827	1553
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1315	1881	1827	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	279	98	175
RTOR Reduction (vph)	0	0	0	102
Lane Group Flow (vph)	76	279	98	73
Heavy Vehicles (%)	25%	1%	4%	4%
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Actuated Green, G (s)	25.0	25.0	25.0	25.0
Effective Green, g (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	547	783	761	647
v/s Ratio Prot	c0.06	c0.15	0.05	0.05
v/s Ratio Perm				
v/c Ratio	0.14	0.36	0.13	0.11
Uniform Delay, d1	10.8	12.0	10.8	10.7
Progression Factor	1.00	0.93	1.00	1.00
Incremental Delay, d2	0.5	1.2	0.3	0.4
Delay (s)	11.4	12.3	11.1	11.1
Level of Service	B	B	B	B
Approach Delay (s/veh)		12.3		
Approach LOS		B		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	0	0	223	0	0	90		
Future Volume (vph)	0	0	223	0	0	90		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
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	242	0	0	98		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	242	0	0	98		
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			0.33			0.13		
Control Delay (s/veh)			13.4			1.5		
Queue Delay			0.0			0.0		

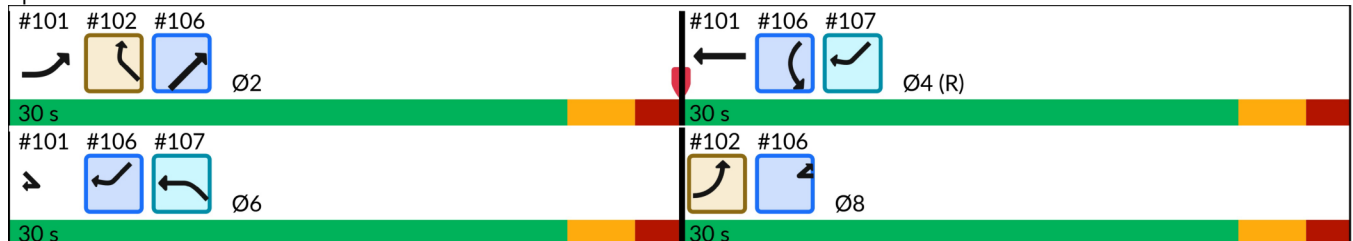


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			13.4			1.5		
LOS			B			A		
Approach Delay (s/veh)			13.4		1.5			
Approach LOS			B		A			
Queue Length 50th (ft)			56			1		
Queue Length 95th (ft)			102			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			744			761		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.33			0.13		

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.52
Intersection Signal Delay (s/veh):	9.9
Intersection LOS:	A
Intersection Capacity Utilization:	29.1%
ICU Level of Service:	A
Analysis Period (min):	15

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

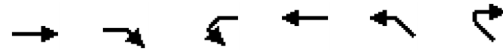


HCM Signalized Intersection Capacity Analysis  
 107: NB PWP to WB Clover Hill

Manasses HEF EA  
 10/12/2025



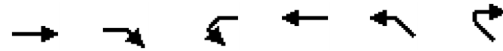
Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	223	0	0	90
Future Volume (vph)	0	0	223	0	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			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	242	0	0	98
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	242	0	0	98
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			c0.14			c0.05
v/s Ratio Perm						
v/c Ratio			0.33			0.13
Uniform Delay, d1			11.8			10.8
Progression Factor			1.00			0.11
Incremental Delay, d2			1.2			0.3
Delay (s)			13.0			1.5
Level of Service			B			A
Approach Delay (s/veh)	0.0		13.0		1.5	
Approach LOS	A		B		A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay (s/veh)			9.7		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.23			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			29.1%		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	161	326	0
Future Volume (vph)	0	0	0	161	326	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	1827	1752	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	1827	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%	4%	3%	0%
Adj. Flow (vph)	0	0	0	175	354	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	175	354	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	33.8%
	ICU Level of Service A
Analysis Period (min)	15



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (veh/h)	0	0	0	161	326	0
Future Volume (Veh/h)	0	0	0	161	326	0
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	175	354	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	175	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	175	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	56	100	
cM capacity (veh/h)			1636	813	1091	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NW 1</b>				
Volume Total	175	354				
Volume Left	0	354				
Volume Right	0	0				
cSH	1700	813				
Volume to Capacity	0.10	0.44				
Queue Length 95th (ft)	0	56				
Control Delay (s/veh)	0.0	12.8				
Lane LOS			B			
Approach Delay (s/veh)	0.0	12.8				
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			8.6			
Intersection Capacity Utilization			33.8%	ICU Level of Service	A	
Analysis Period (min)			15			

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

Manasses HEF EA  
 10/12/2025



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↗	↖	↘	↙
Traffic Volume (vph)	379	1	1	1	3	393
Future Volume (vph)	379	1	1	1	3	393
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			0.950	
Satd. Flow (prot)	0	1809	1900	1615	1805	1615
Fl <sub>t</sub> Permitted		0.952			0.950	
Satd. Flow (perm)	0	1809	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)	412	1	1	1	3	427
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	413	1	1	3	427
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	37.7%
	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)	379	1	1	1	3	393
Future Volume (Veh/h)	379	1	1	1	3	393
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)	412	1	1	1	3	427
<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	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 %	59	100	100	100	100	
cM capacity (veh/h)	1015	892	892	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	413	1	1	3	427	
Volume Left	412	0	0	3	0	
Volume Right	0	0	1	0	427	
cSH	1015	892	1091	1636	1700	
Volume to Capacity	0.41	0.00*	0.00*	0.00*	0.25	
Queue Length 95th (ft)	50	0	0	0	0	
Control Delay (s/veh)	11.0	9.0	8.3	7.2	0.0	
Lane LOS	B	A	A	A		
Approach Delay (s/veh)	11.0	8.7		0.1		
Approach LOS	B	A				
<b>Intersection Summary</b>						
Average Delay			5.4			
Intersection Capacity Utilization			37.7%	ICU Level of Service	A	
Analysis Period (min)			15			

\* Value less than 0.01.

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

















Manassas HEF EA  
 10/12/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	19	1	14	24	352	1	33	180	170	6	1
Future Volume (vph)	7	19	1	14	24	352	1	33	180	170	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>		0.995			0.878			0.886			0.999	
Fl <sub>t</sub> Protected		0.987			0.998						0.954	
Satd. Flow (prot)	0	1866	0	0	1665	0	0	1653	0	0	1811	0
Fl <sub>t</sub> Permitted		0.987			0.998						0.954	
Satd. Flow (perm)	0	1866	0	0	1665	0	0	1653	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%	12%	0%	0%	0%	0%
Adj. Flow (vph)	8	21	1	15	26	383	1	36	196	185	7	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	424	0	0	233	0	0	193	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	57.2%
	ICU Level of Service B
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)	7	19	1	14	24	352	1	33	180	170	6	1
Future Volume (Veh/h)	7	19	1	14	24	352	1	33	180	170	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)	8	21	1	15	26	383	1	36	196	185	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	527	612	8	525	514	134	8			232		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	527	612	8	525	514	134	8			232		
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 %	97	94	100	96	94	58	100			86		
cM capacity (veh/h)	231	354	1081	398	403	920	1625			1348		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	30	424	233	193								
Volume Left	8	15	1	185								
Volume Right	1	383	196	1								
cSH	317	818	1625	1348								
Volume to Capacity	0.09	0.52	0.00*	0.14								
Queue Length 95th (ft)	8	76	0	12								
Control Delay (s/veh)	17.6	14.0	0.0	7.8								
Lane LOS	C	B	A	A								
Approach Delay (s/veh)	17.6	14.0	0.0	7.8								
Approach LOS	C	B										
Intersection Summary												
Average Delay			9.1									
Intersection Capacity Utilization			57.2%		ICU Level of Service					B		
Analysis Period (min)			15									

\* Value less than 0.01.

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	19	1	14	24	352	1	33	180	170	6	1
Future Vol, veh/h	7	19	1	14	24	352	1	33	180	170	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	12	0	0	0	0
Mvmt Flow	8	21	1	15	26	383	1	36	196	185	7	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	527	612	8	525	514	134	8	0	0	232	0	0
Stage 1	378	378	-	136	136	-	-	-	-	-	-	-
Stage 2	149	234	-	389	378	-	-	-	-	-	-	-
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	465	411	1080	466	467	920	1625	-	-	1348	-	-
Stage 1	648	619	-	872	788	-	-	-	-	-	-	-
Stage 2	858	715	-	639	619	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	231	354	1080	398	402	920	1625	-	-	1348	-	-
Mov Cap-2 Maneuver	231	354	-	398	402	-	-	-	-	-	-	-
Stage 1	647	534	-	871	787	-	-	-	-	-	-	-
Stage 2	484	714	-	529	534	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	17.5	11	0	7.8
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1625	-	-	318	1019	1348	-	-
HCM Lane V/C Ratio	0.001	-	-	0.092	0.416	0.137	-	-
HCM Ctrl Dly (s/v)	7.2	0	-	17.5	11	8.1	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.3	2.1	0.5	-	-

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)	202	1	0	13	21	0
Future Volume (vph)	202	1	0	13	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.850					
Fl <sub>t</sub> Protected	0.950					
Satd. Flow (prot)	1770	1615	0	1900	1900	0
Fl <sub>t</sub> Permitted	0.950					
Satd. Flow (perm)	1770	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 (%)	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	220	1	0	14	23	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	220	1	0	14	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.2%
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)	202	1	0	13	21	0
Future Volume (Veh/h)	202	1	0	13	21	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	220	1	0	14	23	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	37	23	23			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	37	23	23			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	77	100	100			
cM capacity (veh/h)	975	1060	1605			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>SB 1</b>		
Volume Total	220	1	14	23		
Volume Left	220	0	0	0		
Volume Right	0	1	0	0		
cSH	975	1060	1700	1700		
Volume to Capacity	0.23	0.00*	0.00*	0.01		
Queue Length 95th (ft)	22	0	0	0		
Control Delay (s/veh)	9.8	8.4	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s/veh)	9.8		0.0	0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			8.4			
Intersection Capacity Utilization			21.2%	ICU Level of Service	A	
Analysis Period (min)			15			

\* Value less than 0.01.

Intersection						
Int Delay, s/veh	8.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑	↑	
Traffic Vol, veh/h	202	1	0	13	21	0
Future Vol, veh/h	202	1	0	13	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	220	1	0	14	23	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	37	23	-	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.2	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-	-	-
Pot Cap-1 Maneuver	975	1060	0	-	-	0
Stage 1	1000	-	0	-	-	0
Stage 2	1009	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	975	1060	-	-	-	-
Mov Cap-2 Maneuver	975	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	975	1060	-
HCM Lane V/C Ratio	-	0.225	0.001	-
HCM Ctrl Dly (s/v)	-	9.8	8.4	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q (veh)	-	0.9	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	180	212	177	35
Future Volume (vph)	0	0	180	212	177	35
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				0.978		
Satd. Flow (prot)	0	0	0	1838	1900	1455
Fl <sub>t</sub> Permitted				0.978		
Satd. Flow (perm)	0	0	0	1838	1900	1455
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%	11%
Adj. Flow (vph)	0	0	196	230	192	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	426	192	38
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	37.1%			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	180	212	177	35
Future Volume (Veh/h)	0	0	180	212	177	35
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	196	230	192	38
<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	814	192	230			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	814	192	230			
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	85			
cM capacity (veh/h)	299	855	1350			
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>SB 1</b>	<b>SB 2</b>			
Volume Total	426	192	38			
Volume Left	196	0	0			
Volume Right	0	0	38			
cSH	1350	1700	1700			
Volume to Capacity	0.15	0.11	0.02			
Queue Length 95th (ft)	13	0	0			
Control Delay (s/veh)	4.5	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	4.5	0.0				
Approach LOS						
<b>Intersection Summary</b>						
Average Delay			2.9			
Intersection Capacity Utilization			37.1%	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)	11	94	104	42	47	10
Future Volume (vph)	11	94	104	42	47	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0	145			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.976	
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)	12	102	113	46	51	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	102	113	46	62	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	22.4%			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)	11	94	104	42	47	10
Future Volume (Veh/h)	11	94	104	42	47	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	102	113	46	51	11
<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	329	57	62			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	329	57	62			
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)	597	1016	1554			
<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	12	102	113	46	62	
Volume Left	12	0	113	0	0	
Volume Right	0	102	0	0	11	
cSH	597	1016	1554	1700	1700	
Volume to Capacity	0.02	0.10	0.07	0.03	0.04	
Queue Length 95th (ft)	2	8	6	0	0	
Control Delay (s/veh)	11.2	8.9	7.5	0.0	0.0	
Lane LOS	B	A	A			
Approach Delay (s/veh)	9.2		5.3		0.0	
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.7			
Intersection Capacity Utilization			22.4%	ICU Level of Service	A	
Analysis Period (min)			15			










Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	11	94	104	42	47	10
Future Vol, veh/h	11	94	104	42	47	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	105	0	145	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	0	0	0	0	0
Mvmt Flow	12	102	113	46	51	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	329	57	62	0	0
Stage 1	57	-	-	-	-
Stage 2	272	-	-	-	-
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	644	1015	1554	-	-
Stage 1	938	-	-	-	-
Stage 2	749	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	597	1015	1554	-	-
Mov Cap-2 Maneuver	597	-	-	-	-
Stage 1	870	-	-	-	-
Stage 2	749	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.1	5.3	0
HCM LOS	A		










Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1554	-	597	1015	-	-
HCM Lane V/C Ratio	0.073	-	0.02	0.101	-	-
HCM Ctrl Dly (s/v)	7.5	-	11.2	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	109	6	6	98	6
Future Volume (vph)	3	109	6	6	98	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.868		0.932			
Flt Protected	0.999					0.955
Satd. Flow (prot)	1648	0	1771	0	0	1798
Flt Permitted	0.999					0.955
Satd. Flow (perm)	1648	0	1771	0	0	1798
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	118	7	7	107	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	0	14	0	0	114
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	26.0%		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	109	6	6	98	6
Future Volume (Veh/h)	3	109	6	6	98	6
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	118	7	7	107	7
<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	232	11			14	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	232	11			14	
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			93	
cM capacity (veh/h)	711	1077			1611	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	121	14	114			
Volume Left	3	0	107			
Volume Right	118	7	0			
cSH	1063	1700	1611			
Volume to Capacity	0.11	0.00*	0.07			
Queue Length 95th (ft)	10	0	5			
Control Delay (s/veh)	8.8	0.0	7.0			
Lane LOS	A		A			
Approach Delay (s/veh)	8.8	0.0	7.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.5			
Intersection Capacity Utilization			26.0%	ICU Level of Service	A	
Analysis Period (min)			15			










\* Value less than 0.01.

Intersection						
Int Delay, s/veh	7.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			4
Traffic Vol, veh/h	3	109	6	6	98	6
Future Vol, veh/h	3	109	6	6	98	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	3	118	7	7	107	7

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	232	11	0	0	14	0
Stage 1	11	-	-	-	-	-
Stage 2	221	-	-	-	-	-
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	761	1076	-	-	1611	-
Stage 1	1017	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	710	1076	-	-	1611	-
Mov Cap-2 Maneuver	710	-	-	-	-	-
Stage 1	1017	-	-	-	-	-
Stage 2	766	-	-	-	-	-










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)	-	-	1061	1611
HCM Lane V/C Ratio	-	-	0.115	0.066
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)	10	0	201	11	0	202
Future Volume (vph)	10	0	201	11	0	202
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	0.993					
Flt Protected	0.950					
Satd. Flow (prot)	1289	0	1852	0	0	1900
Flt Permitted	0.950					
Satd. Flow (perm)	1289	0	1852	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 (%)	40%	0%	0%	36%	0%	0%
Adj. Flow (vph)	11	0	218	12	0	220
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	230	0	0	220
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	21.2%			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)	10	0	201	11	0	202
Future Volume (Veh/h)	10	0	201	11	0	202
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	0	218	12	0	220
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	444	224			230	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	444	224			230	
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)	507	820			1350	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	11	230	220			
Volume Left	11	0	0			
Volume Right	0	12	0			
cSH	507	1700	1350			
Volume to Capacity	0.02	0.14	0.00			
Queue Length 95th (ft)	2	0	0			
Control Delay (s/veh)	12.3	0.0	0.0			
Lane LOS	B					
Approach Delay (s/veh)	12.3	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			21.2%	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	Y		T			T
Traffic Vol, veh/h	10	0	201	11	0	202
Future Vol, veh/h	10	0	201	11	0	202
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, %	40	0	0	36	0	0
Mvmt Flow	11	0	218	12	0	220

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	444	224	0	0	230	0
Stage 1	224	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Critical Hdwy	6.8	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.86	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	507	820	-	-	1350	-
Stage 1	731	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	507	820	-	-	1350	-
Mov Cap-2 Maneuver	507	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	735	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.3	0	0
HCM LOS	B		










Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	507	1350
HCM Lane V/C Ratio	-	-	0.021	-
HCM Ctrl Dly (s/v)	-	-	12.3	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	201	0	1	202
Future Volume (vph)	0	0	201	0	1	202
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	218	0	1	220
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	218	0	0	221
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	14.8%			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	201	0	1	202
Future Volume (Veh/h)	0	0	201	0	1	202
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	218	0	1	220
<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	440	218			218	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	440	218			218	
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)	578	827			1364	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	218	221			
Volume Left	0	0	1			
Volume Right	0	0	0			
cSH	1700	1700	1364			
Volume to Capacity	0.00	0.13	0.00*			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A		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			14.8%	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	TT		TT			TT
Traffic Vol, veh/h	0	0	201	0	1	202
Future Vol, veh/h	0	0	201	0	1	202
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	218	0	1	220

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	440	218	0	0	218
Stage 1	218	-	-	-	-
Stage 2	222	-	-	-	-
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	578	827	-	-	1364
Stage 1	823	-	-	-	-
Stage 2	820	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	577	827	-	-	1364
Mov Cap-2 Maneuver	577	-	-	-	-
Stage 1	823	-	-	-	-
Stage 2	819	-	-	-	-

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)	-	-	-	1364
HCM Lane V/C Ratio	-	-	-	0.001
HCM Ctrl Dly (s/v)	-	-	0	7.6
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	65	65	136	137	81
Future Volume (vph)	76	65	65	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			0.909		0.950	
Flt Protected		0.974			0.970	
Satd. Flow (prot)	0	1851	1727	0	1751	0
Flt Permitted		0.974			0.970	
Satd. Flow (perm)	0	1851	1727	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	71	71	148	149	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	154	219	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	41.9%
	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	65	65	136	137	81
Future Volume (Veh/h)	76	65	65	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	71	71	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	219				382	145
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	219				382	145
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)	1362				586	908
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NW 1</b>	<b>SW 1</b>			
Volume Total	154	219	237			
Volume Left	83	0	149			
Volume Right	0	148	88			
cSH	1362	1700	675			
Volume to Capacity	0.06	0.13	0.35			
Queue Length 95th (ft)	5	0	39			
Control Delay (s/veh)	4.4	0.0	13.2			
Lane LOS	A		B			
Approach Delay (s/veh)	4.4	0.0	13.2			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			6.2			
Intersection Capacity Utilization			41.9%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	6.2					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	76	65	65	136	137	81
Future Vol, veh/h	76	65	65	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	71	71	148	149	88




















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	219	0	0	382	145
Stage 1	-	-	-	145	-
Stage 2	-	-	-	237	-
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	1362	-	-	624	908
Stage 1	-	-	-	887	-
Stage 2	-	-	-	807	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1362	-	-	585	908
Mov Cap-2 Maneuver	-	-	-	585	-
Stage 1	-	-	-	831	-
Stage 2	-	-	-	807	-

Approach	SE	NW	SW
HCM Ctrl Dly, s/v	4.2	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SETSWLn1
Capacity (veh/h)	-	-	1362	674
HCM Lane V/C Ratio	-	-	0.061	0.352
HCM Ctrl Dly (s/v)	-	-	7.8	13.2
HCM Lane LOS	-	-	A	B
HCM 95th %tile Q (veh)	-	-	0.2	1.6




















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)	24	38	0	6	36	28	0	3	0	43	0	24
Future Volume (vph)	24	38	0	6	36	28	0	3	0	43	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	305		0	0		0	0		105
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	95			105			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.935							0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1805	3610	0	1805	3301	0	0	1900	0	0	1805	1615
Flt Permitted	0.950			0.950							0.950	
Satd. Flow (perm)	1805	3610	0	1805	3301	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)	26	41	0	7	39	30	0	3	0	47	0	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	41	0	7	69	0	0	3	0	0	47	26
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	23.7%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
15: Gateway Blvd

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)	24	38	0	6	36	28	0	3	0	43	0	24
Future Volume (Veh/h)	24	38	0	6	36	28	0	3	0	43	0	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	41	0	7	39	30	0	3	0	47	0	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	69			41			140	176	21	142	161	35
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	69			41			140	176	21	142	161	35
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	94	100	97
cM capacity (veh/h)	1545			1581			789	706	1059	803	719	1037
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	26	27	14	7	26	43	3	73				
Volume Left	26	0	0	7	0	0	0	47				
Volume Right	0	0	0	0	0	30	0	26				
cSH	1545	1700	1700	1581	1700	1700	706	1248				
Volume to Capacity	0.02	0.02	0.00*	0.00*	0.02	0.03	0.00*	0.06				
Queue Length 95th (ft)	1	0	0	0	0	0	0	5				
Control Delay (s/veh)	7.4	0.0	0.0	7.3	0.0	0.0	10.1	9.3				
Lane LOS	A			A			B	A				
Approach Delay (s/veh)	2.9			0.7			10.1	9.3				
Approach LOS							B	A				
Intersection Summary												
Average Delay			4.4									
Intersection Capacity Utilization			23.7%		ICU Level of Service			A				
Analysis Period (min)			15									

\* Value less than 0.01.

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕			↕	↗
Traffic Vol, veh/h	24	38	0	6	36	28	0	3	0	43	0	24
Future Vol, veh/h	24	38	0	6	36	28	0	3	0	43	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	305	-	-	-	-	-	-	-	105
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	26	41	0	7	39	30	0	3	0	47	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	41	0	0	127	176	21	142	161	35
Stage 1	-	-	-	-	-	-	93	93	-	68	68	-
Stage 2	-	-	-	-	-	-	34	83	-	74	93	-
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	1545	-	-	1581	-	-	839	721	1058	819	735	1037
Stage 1	-	-	-	-	-	-	909	822	-	940	842	-
Stage 2	-	-	-	-	-	-	983	830	-	933	822	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1545	-	-	1581	-	-	805	706	1058	803	720	1037
Mov Cap-2 Maneuver	-	-	-	-	-	-	805	706	-	803	720	-
Stage 1	-	-	-	-	-	-	894	808	-	924	839	-
Stage 2	-	-	-	-	-	-	954	827	-	914	808	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	2.9			0.6			10.1			9.4		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	706	1545	-	-	1581	-	-	803	1037
HCM Lane V/C Ratio	0.005	0.017	-	-	0.004	-	-	0.058	0.025
HCM Ctrl Dly (s/v)	10.1	7.4	-	-	7.3	-	-	9.8	8.6
HCM Lane LOS	B	A	-	-	A	-	-	A	A
HCM 95th %tile Q (veh)	0	0.1	-	-	0	-	-	0.2	0.1



Lane Group	EBL	EBR	WBT	SER	Ø8
Lane Configurations					
Traffic Volume (vph)	218	162	201	195	
Future Volume (vph)	218	162	201	195	
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)		176			
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)	237	176	218	212	
Shared Lane Traffic (%)					
Lane Group Flow (vph)	237	176	218	212	
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	0.28	0.31	
Control Delay (s/veh)	13.0	0.1	12.2	13.3	
Queue Delay	0.0	0.0	0.0	0.0	

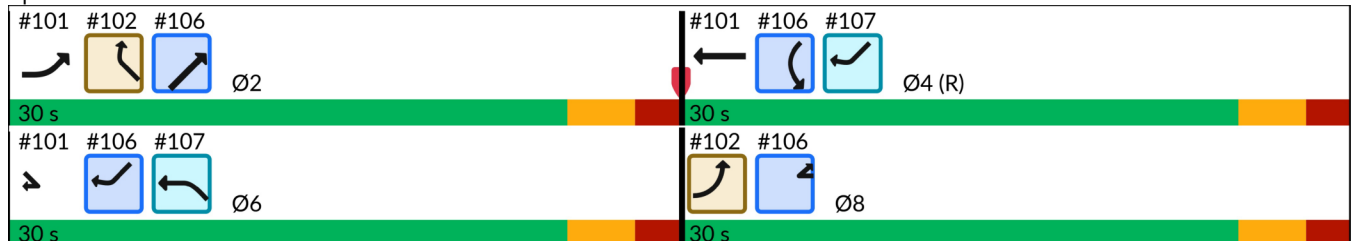


Lane Group	EBL	EBR	WBT	SER	Ø8
Total Delay (s/veh)	13.0	0.1	12.2	13.3	
LOS	B	A	B	B	
Approach Delay (s/veh)			12.2		
Approach LOS			B		
Queue Length 50th (ft)	55	0	56	49	
Queue Length 95th (ft)	99	0	98	92	
Internal Link Dist (ft)			57		
Turn Bay Length (ft)					
Base Capacity (vph)	791	1615	791	685	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.30	0.11	0.28	0.31	

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:	0.31
Intersection Signal Delay (s/veh):	10.2
Intersection LOS:	B
Intersection Capacity Utilization:	31.0%
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)	218	162	201	195
Future Volume (vph)	218	162	201	195
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)	237	176	218	212
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	237	176	218	212
Heavy Vehicles (%)	0%	0%	0%	0%
Turn Type	Prot	Free	NA	Prot
Protected Phases	2		4	6
Permitted Phases		Free		
Actuated Green, G (s)	25.0	60.0	25.0	25.0
Effective Green, g (s)	25.0	60.0	25.0	25.0
Actuated g/C Ratio	0.42	1.00	0.42	0.42
Clearance Time (s)	5.0		5.0	5.0
Lane Grp Cap (vph)	791	1615	791	685
v/s Ratio Prot	0.12		c0.11	c0.13
v/s Ratio Perm		0.11		
v/c Ratio	0.30	0.11	0.28	0.31
Uniform Delay, d1	11.7	0.0	11.5	11.7
Progression Factor	1.00	1.00	0.96	1.00
Incremental Delay, d2	1.0	0.1	0.9	1.2
Delay (s)	12.6	0.1	11.9	12.9
Level of Service	B	A	B	B
Approach Delay (s/veh)			11.9	
Approach LOS			B	
<b>Intersection Summary</b>				
HCM 2000 Control Delay (s/veh)		9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio		0.29		
Actuated Cycle Length (s)		60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization		31.0%	ICU Level of Service	A
Analysis Period (min)		15		

c Critical Lane Group



Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	174	0	0	0	0	218		
Future Volume (vph)	174	0	0	0	0	218		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt								
Flt Protected	0.950							
Satd. Flow (prot)	1805	0	0	0	0	1900		
Flt Permitted	0.950							
Satd. Flow (perm)	1805	0	0	0	0	1900		
Right Turn on Red	No	No		No		No		
Satd. Flow (RTOR)								
Link Speed (mph)	25		25		25			
Link Distance (ft)	246		392		85			
Travel Time (s)	6.7		10.7		2.3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	189	0	0	0	0	237		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	189	0	0	0	0	237		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	L NA	Right	Left	Right	Left	Right		
Median Width(ft)	12		0		0			
Link Offset(ft)	0		0		12			
Crosswalk Width(ft)	16		16		16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15	9	15	25		
Turn Type	Prot					Prot		
Protected Phases	8					2	4	6
Permitted Phases								
Minimum Split (s)	23.0					23.0	23.0	10.0
Total Split (s)	30.0					30.0	30.0	30.0
Total Split (%)	50.0%					50.0%	50%	50%
Maximum Green (s)	25.0					25.0	25.0	25.0
Yellow Time (s)	3.0					3.0	3.0	3.0
All-Red Time (s)	2.0					2.0	2.0	2.0
Lost Time Adjust (s)	0.0					0.0		
Total Lost Time (s)	5.0					5.0		
Lead/Lag								
Lead-Lag Optimize?								
Walk Time (s)	7.0						7.0	
Flash Don't Walk (s)	11.0						11.0	
Pedestrian Calls (#/hr)	0						0	
Act Effct Green (s)	25.0					25.0		
Actuated g/C Ratio	0.42					0.42		
v/c Ratio	0.25					0.30		
Control Delay (s/veh)	12.6					2.3		
Queue Delay	0.0					0.0		

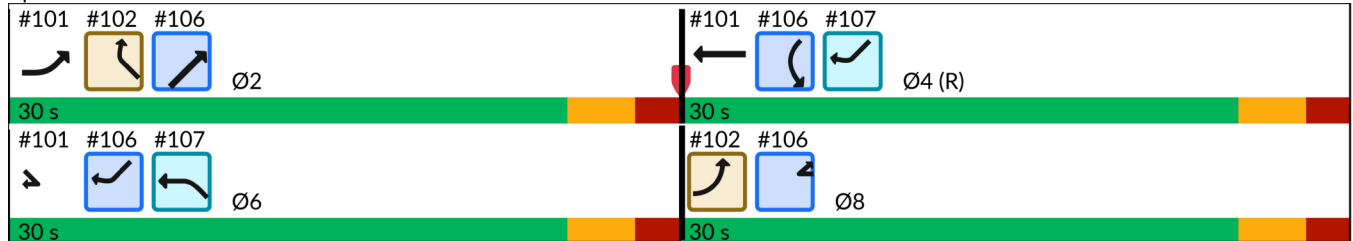


Lane Group	EBL	EBR	SBL	SBR	NWL	NWR	Ø4	Ø6
Total Delay (s/veh)	12.6							2.3
LOS	B							A
Approach Delay (s/veh)	12.6				2.3			
Approach LOS	B				A			
Queue Length 50th (ft)	43							4
Queue Length 95th (ft)	81							6
Internal Link Dist (ft)	166		312		5			
Turn Bay Length (ft)								
Base Capacity (vph)	752							791
Starvation Cap Reductn	0							0
Spillback Cap Reductn	0							0
Storage Cap Reductn	0							0
Reduced v/c Ratio	0.25							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:	0.31
Intersection Signal Delay (s/veh):	6.8
Intersection LOS:	A
Intersection Capacity Utilization:	24.4%
ICU Level of Service:	A
Analysis Period (min):	15

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





Movement	EBL	EBR	SBL	SBR	NWL	NWR
Lane Configurations	↔					↔
Traffic Volume (vph)	174	0	0	0	0	218
Future Volume (vph)	174	0	0	0	0	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0					5.0
Lane Util. Factor	1.00					1.00
Frt	1.00					1.00
Flt Protected	0.95					1.00
Satd. Flow (prot)	1805					1900
Flt Permitted	0.95					1.00
Satd. Flow (perm)	1805					1900
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	0	0	0	0	237
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	189	0	0	0	0	237
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot					Prot
Protected Phases	8					2
Permitted Phases						
Actuated Green, G (s)	25.0					25.0
Effective Green, g (s)	25.0					25.0
Actuated g/C Ratio	0.42					0.42
Clearance Time (s)	5.0					5.0
Lane Grp Cap (vph)	752					791
v/s Ratio Prot	c0.10					c0.12
v/s Ratio Perm						
v/c Ratio	0.25					0.30
Uniform Delay, d1	11.4					11.7
Progression Factor	1.00					0.11
Incremental Delay, d2	0.8					0.9
Delay (s)	12.2					2.2
Level of Service	B					A
Approach Delay (s/veh)	12.2		0.0		2.2	
Approach LOS	B		A		A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay (s/veh)			6.7		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.28			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			24.4%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group



Lane Group	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	49	0	0	162
Future Volume (vph)	0	0	49	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
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	53	0	0	176
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	53	0	0	176
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	29.1%
	ICU Level of Service A
Analysis Period (min)	15



Movement	WBL	WBR	SEL	SER	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	0	0	49	0	0	162
Future Volume (Veh/h)	0	0	49	0	0	162
Sign Control	Free		Yield		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	53	0	0	176
<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			176	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			176	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)			818	1091	1636	
<b>Direction, Lane #</b>	<b>SE 1</b>	<b>NE 1</b>				
Volume Total	53	176				
Volume Left	53	0				
Volume Right	0	0				
cSH	818	1700				
Volume to Capacity	0.06	0.10				
Queue Length 95th (ft)	5	0				
Control Delay (s/veh)	9.7	0.0				
Lane LOS	A					
Approach Delay (s/veh)	9.7	0.0				
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			2.2			
Intersection Capacity Utilization			29.1%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBR	NET	SWL	SWR
Lane Configurations	↗	↑	↖	↗
Traffic Volume (vph)	59	216	93	214
Future Volume (vph)	59	216	93	214
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)	1494	1900	1900	1583
Flt Permitted				
Satd. Flow (perm)	1494	1900	1900	1583
Right Turn on Red	No			Yes
Satd. Flow (RTOR)				233
Link Speed (mph)		25		
Link Distance (ft)		134		
Travel Time (s)		3.7		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	0%	0%	2%
Adj. Flow (vph)	64	235	101	233
Shared Lane Traffic (%)				
Lane Group Flow (vph)	64	235	101	233
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Right	Left	Left	Right
Median Width(ft)		12		
Link Offset(ft)		-6		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	9
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Minimum Split (s)	23.0	23.0	23.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Walk Time (s)	7.0		7.0	
Flash Don't Walk (s)	11.0		11.0	
Pedestrian Calls (#/hr)	0		0	
Act Effct Green (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
v/c Ratio	0.10	0.30	0.13	0.29
Control Delay (s/veh)	11.3	10.5	11.4	3.0
Queue Delay	0.0	0.0	0.0	0.0

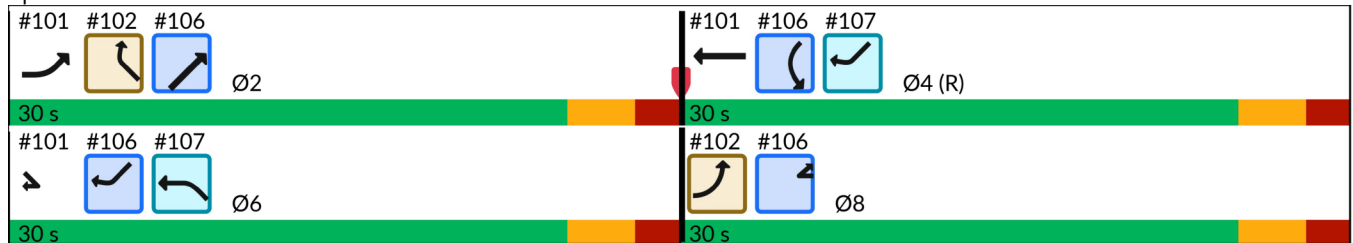


Lane Group	WBR	NET	SWL	SWR
Total Delay (s/veh)	11.3	10.5	11.4	3.0
LOS	B	B	B	A
Approach Delay (s/veh)	10.5			
Approach LOS	B			
Queue Length 50th (ft)	13	48	22	0
Queue Length 95th (ft)	33	82	47	34
Internal Link Dist (ft)	54			
Turn Bay Length (ft)				
Base Capacity (vph)	622	791	791	795
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.30	0.13	0.29

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.31
Intersection Signal Delay (s/veh):	8.0
Intersection LOS:	A
Intersection Capacity Utilization:	24.0%
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)	59	216	93	214
Future Volume (vph)	59	216	93	214
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt	0.87	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1494	1900	1900	1583
Flt Permitted	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1494	1900	1900	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	235	101	233
RTOR Reduction (vph)	0	0	0	136
Lane Group Flow (vph)	64	235	101	97
Heavy Vehicles (%)	10%	0%	0%	2%
Turn Type	Prot	NA	Prot	Prot
Protected Phases	8	2	4	6
Permitted Phases				
Actuated Green, G (s)	25.0	25.0	25.0	25.0
Effective Green, g (s)	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	622	791	791	659
v/s Ratio Prot	0.04	c0.12	c0.05	0.06
v/s Ratio Perm				
v/c Ratio	0.10	0.30	0.13	0.15
Uniform Delay, d1	10.7	11.7	10.8	10.9
Progression Factor	1.00	0.80	1.00	1.00
Incremental Delay, d2	0.3	0.9	0.3	0.5
Delay (s)	11.0	10.2	11.1	11.3
Level of Service	B	B	B	B
Approach Delay (s/veh)		10.2		
Approach LOS		B		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.0%	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	158	0	0	93		
Future Volume (vph)	0	0	158	0	0	93		
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	172	0	0	101		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	172	0	0	101		
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			0.23			0.13		
Control Delay (s/veh)			12.3			1.5		
Queue Delay			0.0			0.0		

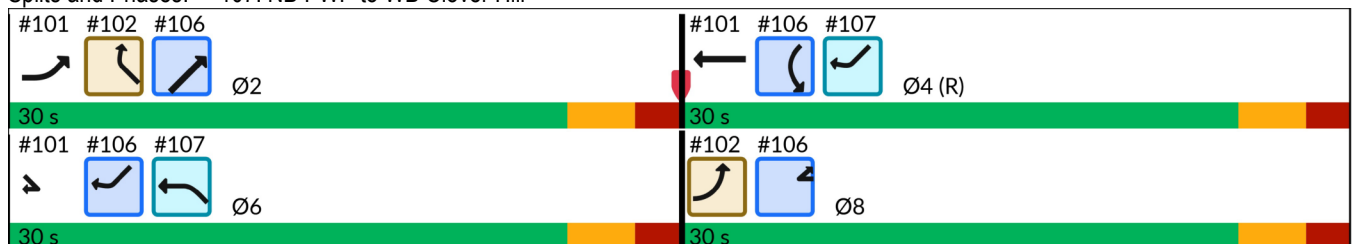


Lane Group	EBL	EBR	NWL	NWR	SWL	SWR	Ø2	Ø8
Total Delay (s/veh)			12.3			1.5		
LOS			B			A		
Approach Delay (s/veh)			12.3		1.5			
Approach LOS			B		A			
Queue Length 50th (ft)			38			1		
Queue Length 95th (ft)			74			3		
Internal Link Dist (ft)	310		106		1			
Turn Bay Length (ft)								
Base Capacity (vph)			752			791		
Starvation Cap Reductn			0			0		
Spillback Cap Reductn			0			0		
Storage Cap Reductn			0			0		
Reduced v/c Ratio			0.23			0.13		

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 4:WBT, Start of Green, Master Intersection
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.31
Intersection Signal Delay (s/veh):	8.3
Intersection LOS:	A
Intersection Capacity Utilization:	25.1%
ICU Level of Service:	A
Analysis Period (min):	15

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



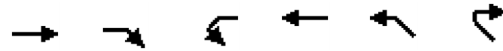
HCM Signalized Intersection Capacity Analysis  
 107: NB PWP to WB Clover Hill

Manasses HEF EA  
 10/12/2025



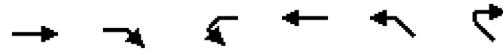
Movement	EBL	EBR	NWL	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	158	0	0	93
Future Volume (vph)	0	0	158	0	0	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			0.95			1.00
Satd. Flow (prot)			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	172	0	0	101
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	172	0	0	101
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			c0.10			c0.05
v/s Ratio Perm						
v/c Ratio			0.23			0.13
Uniform Delay, d1			11.3			10.8
Progression Factor			1.00			0.11
Incremental Delay, d2			0.7			0.3
Delay (s)			12.0			1.5
Level of Service			B			A
Approach Delay (s/veh)	0.0		12.0		1.5	
Approach LOS	A		B		A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay (s/veh)			8.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.18			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			25.1%		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	214	176	0
Future Volume (vph)	0	0	0	214	176	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	233	191	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	233	191	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	35.4% ICU Level of Service A
Analysis Period (min)	15



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑	↑	
Traffic Volume (veh/h)	0	0	0	214	176	0
Future Volume (Veh/h)	0	0	0	214	176	0
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	233	191	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	233	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0	233	0	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	75	100	
cM capacity (veh/h)			1636	760	1091	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NW 1</b>				
Volume Total	233	191				
Volume Left	0	191				
Volume Right	0	0				
cSH	1700	760				
Volume to Capacity	0.14	0.25				
Queue Length 95th (ft)	0	25				
Control Delay (s/veh)	0.0	11.3				
Lane LOS			B			
Approach Delay (s/veh)	0.0	11.3				
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			5.1			
Intersection Capacity Utilization			35.4%	ICU Level of Service	A	
Analysis Period (min)			15			