

Appendix H – LOS and Queuing Result Tables

Measures of Effectiveness
 AM Peak Hour (6:30-7:30)

1. Prince William Parkway at Clover Hill Rd

Signalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)									
			Eastbound		Westbound		Northbound			Southbound		
			LT	R	LT	R	L	T	R	L	T	R
2024 Existing	31.7 (C)	Lane Group	97.3 (F)	57.9 (E)	64.5 (E)	59.3 (E)	76.3 (E)	27.6 (C)	0.0 (A)	81.9 (F)	22.5 (C)	0.1 (A)
		Approach	88.1 (F)		60.9 (E)		29.9 (C)			23.0 (C)		
2027 No Build	33.1 (C)	Lane Group	84.8 (F)	59.5 (E)	64.8 (E)	60.1 (E)	80.0 (F)	25.9 (C)	0.0 (A)	77.4 (E)	26.1 (C)	0.1 (A)
		Approach	70.8 (E)		61.5 (E)		30.9 (C)			25.0 (C)		
2027 Construction	50.4 (D)	Lane Group	173.4 (F)	57.5 (E)	75.3 (E)	57.8 (E)	151.6 (F)	34.6 (C)	0.0 (A)	82.6 (F)	36.2 (D)	0.3 (A)
		Approach	116.1 (F)		64.8 (E)		51.7 (D)			30.7 (C)		
2027 Construction with Signal Modifications	48.1 (D)	Lane Group	96 (F)	47.4 (D)	54.3 (D)	49.6 (D)	74.2 (E)	39.4 (D)	0.0 (A)	127.2 (F)	57.0 (E)	0.3 (A)
		Approach	72.0 (E)		51.5 (D)		44.0 (D)			48.3 (D)		

95th Percentile Queues- Synchro Lanes, Volumes, Timings

Scenario		Eastbound		Westbound		Northbound			Southbound		
		LT	R	LT	R	L	T	R	L	T	R
Storage Length Available (ft)		1115	1115	1075	1075	470	-	355	470	-	280
95 th Percentile Queue Length (ft)	2024 Existing	144	0	160	28	183	#1243	0	92	614	0
	2027 No Build	180	62	165	80	#408	#1331	0	105	699	0
	2027 Construction	#413	73	253	80	#783	#1341	0	105	702	0
	2027 Construction with Signal Modifications	#239	63	196	133	#467	#1221	0	#112	#868	0

indicates 95 percentile volume exceeds capacity, queue may be longer.

Measures of Effectiveness

AM Peak Hour (6:30-7:30)

2. Harry J. Parrish Blvd at Clover Hill Rd

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)					
			Southeastbound		Northwestbound		Southwestbound	
			LT	T	R	L	R	
2024 Existing	4.8 (A)	Lane Group	11.4	0.0	8.5	7.3	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	11.4	8.5		1.5		
			(B)	(A)		(A)		
2027 No Build	4.4 (A)	Lane Group	11.2	0.0	8.4	7.3	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	11.2	8.4		1.0		
			(B)	(A)		(A)		
2027 Construction	3.7 (A)	Lane Group	12.8	0.0	8.4	7.3	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	12.8	8.4		0.6		
			(B)	(A)		(A)		
2036 No Build	3.8 (A)	Lane Group	11.7	0.0	8.4	7.3	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	11.7	8.4		1.1		
			(B)	(A)		(A)		
2036 Build	3.9 (A)	Lane Group	13.2	0.0	8.4	7.3	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	13.2	8.4		0.7		
			(B)	(A)		(A)		
2041 No Build	3.8 (A)	Lane Group	12.2	0.0	8.4	7.3	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	12.2	8.4		1.1		
			(B)	(A)		(A)		
2041 Build	4.0 (A)	Lane Group	14	0.0	8.4	7.3	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	14	8.4		0.8		
			(B)	(A)		(A)		

95th Percentile Queues - HCM 2000

Scenario		Southeastbound	Northwestbound		Southwestbound	
		LT	T	R	L	R
Storage Length Available (ft)		1210	405	255	1115	1115
95 th Percentile Queue Length (ft)	2024 Existing	15	0	4	3	0
	2027 No Build	24	0	2	3	0
	2027 Construction	52	0	2	3	0
	2036 No Build	28	0	2	3	0
	2036 Build	53	0	2	3	0
	2041 No Build	31	0	2	4	0
	2041 Build	59	0	2	4	0

Measures of Effectiveness
 AM Peak Hour (6:30-7:30)

3. Harry J. Parrish at Wakeman Drive

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)					
			Eastbound	Westbound	Northbound		Southbound	
			LTR	LTR	L	TR	L	TR
2024 Existing	6.5 (A)	Lane Group	9.3 (A)	7.6 (A)	7.2 (A)	0.0 (A)	7.3 (A)	0.0 (A)
		Approach	9.3 (A)	7.6 (A)	2.4 (A)		5.1 (A)	
2027 No Build	7.1 (A)	Lane Group	9.1 (A)	7.9 (A)	7.2 (A)	0.0 (A)	7.3 (A)	0.0 (A)
		Approach	9.1 (A)	7.9 (A)	2 (A)		6.4 (A)	0.0 (A)
2027 Construction	8.4 (A)	Lane Group	11.9 (B)	10.4 (B)	7.2 (A)	0.0 (A)	7.6 (A)	0.0 (A)
		Approach	11.9 (B)	10.4 (B)	0.2 (A)		7.2 (A)	
2036 No Build	7.2 (A)	Lane Group	9.2 (A)	8 (A)	7.2 (A)	0.0 (A)	7.3 (A)	0.0 (A)
		Approach	9.2 (A)	8 (A)	2.1 (A)		6.4 (A)	
2036 Build	6.7 (A)	Lane Group	10.6 (B)	9.5 (A)	7.2 (A)	0.0 (A)	7.6 (A)	0.0 (A)
		Approach	10.6 (B)	9.5 (A)	0.2 (A)		6.7 (A)	
2041 No Build	7.2 (A)	Lane Group	9.3 (A)	8.1 (A)	7.2 (A)	0.0 (A)	7.3 (A)	0.0 (A)
		Approach	9.3 (A)	8.1 (A)	1.9 (A)		6.4 (A)	
2041 Build	6.9 (A)	Lane Group	10.9 (B)	9.7 (A)	7.2 (A)	0.0 (A)	7.6 (A)	0.0 (A)
		Approach	10.9 (B)	9.7 (A)	0.2 (A)		6.7 (A)	

95th Percentile Queues - HCM 2000

Scenario	Eastbound	Westbound	Northbound	Southbound	
	LTR	LTR	LTR	LTR	
Storage Length Available (ft)	140	790	260	235	
95 th Percentile Queue Length (ft)	2024 Existing	1	14	0	2
	2027 No Build	0	10	0	2
	2027 Construction	0	67	0	6
	2036 No Build	0	13	0	3
	2036 Build	0	48	0	3
	2041 No Build	0	14	0	3
	2041 Build	0	53	0	3

Measures of Effectiveness

AM Peak Hour (6:30-7:30)

4. Wakeman Drive at Frontage Rd Exit

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)			
			Eastbound		Northbound	Southbound
			L	R	T	T
2024 Existing	3.0 (A)	Lane Group	8.8 (A)	8.4 (A)	-	-
		Approach	8.7 (A)		-	-
2027 No Build	2.0 (A)	Lane Group	8.6 (A)	8.4 (A)	-	-
		Approach	8.6 (A)		-	-
2027 Construction	7.2 (A)	Lane Group	9.1 (A)	8.4 (A)	-	-
		Approach	9.1 (A)		-	-
2036 No Build	2.1 (A)	Lane Group	8.7 (A)	8.4 (A)	-	-
		Approach	8.7 (A)		-	-
2036 Build	7.8 (A)	Lane Group	9.4 (A)	8.4 (A)	-	-
		Approach	9.4 (A)		-	-
2041 No Build	2.0 (A)	Lane Group	8.7 (A)	8.4 (A)	-	-
		Approach	8.7 (A)		-	-
2041 Build	7.7 (A)	Lane Group	9.4 (A)	8.4 (A)	-	-
		Approach	9.4 (A)		-	-

95th Percentile Queues - HCM 2000

Scenario	Eastbound		Northbound	Southbound	
	L	R	T	T	
Storage Length Available (ft)	170	170	845	260	
95 th Percentile Queue Length (ft)	2024 Existing	1	0	0	0
	2027 No Build	1	0	0	0
	2027 Construction	8	0	0	0
	2036 No Build	1	0	0	0
	2036 Build	13	0	0	0
	2041 No Build	1	0	0	0
	2041 Build	14	0	0	0

Measures of Effectiveness

AM Peak Hour (6:30-7:30)

5. Wakeman Drive at Frontage Road Entrance

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)			
			Eastbound	Northbound	Southbound	
			LR	LT	T	R
2024 Existing	1.4 (A)	Lane Group	10.0	1.2	0.0	0.0
			(B)	(A)	(A)	(A)
		Approach	10.0	1.2	0.0	
			(B)	(A)	(A)	
2027 No Build	1.0 (A)	Lane Group	9.8	1	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	9.8	1	0.0	
			(A)	(A)	(A)	
2027 Construction	1.9 (A)	Lane Group	-	2.6	0.0	0.0
			-	(A)	(A)	(A)
		Approach	-	2.6	0.0	
			-	(A)	(A)	
2036 No Build	1.0 (A)	Lane Group	10.1	1	0.0	0.0
			(B)	(A)	(A)	(A)
		Approach	10.1	1	0.0	
			(B)	(A)	(A)	
2036 Build	3.6 (A)	Lane Group	-	4.8	0.0	0.0
			-	(A)	(A)	(A)
		Approach	-	4.8	0.0	
			-	(A)	(A)	
2041 No Build	1.0 (A)	Lane Group	10.2	0.9	0.0	0.0
			(B)	(A)	(A)	(A)
		Approach	10.2	0.9	0.0	
			(B)	(A)	(A)	
2041 Build	4.3 (A)	Lane Group	-	4.7	0.0	0.0
			-	(A)	(A)	(A)
		Approach	-	4.7	0.0	
			-	(A)	(A)	

*Note: EB approach eliminated under Construction and Build Conditions

95th Percentile Queues - HCM 2000

Scenario		Eastbound	Northbound	Southbound	
		LR	LT	T	R
Storage Length Available (ft)		150	235	875	165
95 th Percentile Queue Length (ft)	2024 Existing	2	1	0	0
	2027 No Build	1	1	0	0
	2027 Construction	-	6	0	0
	2036 No Build	1	1	0	0
	2036 Build	-	11	0	0
	2041 No Build	1	1	0	0
	2041 Build	-	11	0	0

*Note: EB approach eliminated under Construction and Build Conditions

Measures of Effectiveness

AM Peak Hour (6:30-7:30)

6. Wakeman Drive at Employee Lot

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Southeastbound		Northwestbound		Southwestbound
			L	T	T	R	LR
2024 Existing	1.1 (A)	Lane Group	7.4	0.0	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	2.1		0.0		0.0
			(A)		(A)		(A)
2027 No Build	1.1 (A)	Lane Group	7.4	0.0	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	2.2		-		0.0
			(A)		-		(A)
2027 Construction	0.7 (A)	Lane Group	7.5	0.0	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	1.2		0.0		0.0
			(A)		(A)		(A)
2036 No Build	1.1 (A)	Lane Group	7.5	0.0	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	2.2		0.0		0.0
			(A)		(A)		(A)
2036 Build	1.1 (A)	Lane Group	7.5	0.0	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	2.1		0.0		0.0
			(A)		(A)		(A)
2041 No Build	1.1 (A)	Lane Group	7.5	0.0	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	2.1		0.0		0.0
			(A)		(A)		(A)
2041 Build	1.1 (A)	Lane Group	7.6	0.0	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	2.1		0.0		0.0
			(A)		(A)		(A)

95th Percentile Queues - HCM 2000

Scenario	Southeastbound	Northwestbound	Southwestbound	
	LT	TR	LR	
Storage Length Available (ft)	325	170	255	
95 th Percentile Queue Length (ft)	2024 Existing	2	0	0
	2027 No Build	2	0	0
	2027 Construction	12	0	0
	2036 No Build	2	0	0
	2036 Build	2	0	0
	2041 No Build	2	0	0
	2041 Build	2	0	0

Measures of Effectiveness

AM Peak Hour (6:30-7:30)

7. Wakeman Drive at Observation Rd

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Eastbound		Northbound		Southbound
			L	R	L	T	TR
2024 Existing	4.8 (A)	Lane Group	11.0	8.9	7.5	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	10.1		3.3		0.0
			(B)		(A)		(A)
2027 No Build	4.0 (A)	Lane Group	10.0	8.8	7.5	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	9.3		2.9		0.0
			(A)		(A)		(A)
2027 Construction	5.6 (A)	Lane Group	10.9	9.4	7.6	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	9.7		3.9		0.0
			(A)		(A)		(A)
2036 No Build	4.1 (A)	Lane Group	10.4	8.9	7.5	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	9.6		2.9		0.0
			(A)		(A)		(A)
2036 Build	4.3 (A)	Lane Group	10.6	9.0	7.5	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	9.6		3.1		0.0
			(A)		(A)		(A)
2041 No Build	4.1 (A)	Lane Group	10.7	9.0	7.5	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	9.7		2.9		0.0
			(A)		(A)		(A)
2041 Build	4.4 (A)	Lane Group	10.9	9.1	7.6	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	9.8		3.1		0.0
			(A)		(A)		(A)

95th Percentile Queues - HCM 2000

Scenario		Eastbound		Northbound		Southbound
		L	R	L	T	TR
Storage Length Available (ft)		105	865	145	620	240
95 th Percentile Queue Length (ft)	2024 Existing	10	5	3	0	0
	2027 No Build	4	4	2	0	0
	2027 Construction	5	14	4	0	0
	2036 No Build	5	5	2	0	0
	2036 Build	5	6	3	0	0
	2041 No Build	6	5	2	0	0
	2041 Build	6	7	3	0	0

Measures of Effectiveness
AM Peak Hour (6:30-7:30)
8. Observation Rd at Piper Ln

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)			
			Westbound	Northbound	Southbound	
			LR	TR	L	T
2024 Existing	3.0 (A)	Lane Group	9.5 (A)	0.0 (A)	7.5 (A)	7.5 (A)
		Approach	9.5 (A)	0.0 (A)	3.3 (A)	3.3 (A)
2027 No Build	5.0 (A)	Lane Group	9.0 (A)	0.0 (A)	7.5 (A)	7.5 (A)
		Approach	9.0 (A)	0.0 (A)	5.5 (A)	5.5 (A)
2027 Construction	6.4 (A)	Lane Group	9.3 (A)	0.0 (A)	7.6 (A)	7.6 (A)
		Approach	9.3 (A)	0.0 (A)	6.7 (A)	6.7 (A)
2036 No Build	5.1 (A)	Lane Group	9.1 (A)	0.0 (A)	7.5 (A)	7.5 (A)
		Approach	9.1 (A)	0.0 (A)	5.6 (A)	5.6 (A)
2036 Build	5.3 (A)	Lane Group	9.1 (A)	0.0 (A)	7.5 (A)	7.5 (A)
		Approach	9.1 (A)	0.0 (A)	5.8 (A)	5.8 (A)
2041 No Build	5.1 (A)	Lane Group	9.2 (A)	0.0 (A)	7.5 (A)	7.5 (A)
		Approach	9.2 (A)	0.0 (A)	5.6 (A)	5.6 (A)
2041 Build	5.3 (A)	Lane Group	9.2 (A)	0.0 (A)	7.6 (A)	7.6 (A)
		Approach	9.2 (A)	0.0 (A)	5.8 (A)	5.8 (A)

*Note: Intersection configuration and location changed between 2024 Existing and 2027 No Build Conditions

95th Percentile Queues - HCM 2000

Scenario	Westbound	Northbound	Southbound	
	LR	TR	LT	
Storage Length Available (ft)	1630	640	600	
95 th Percentile Queue Length (ft)	2024 Existing	4	0	2
	2027 No Build	4	0	3
	2027 Construction	7	0	9
	2036 No Build	5	0	4
	2036 Build	5	0	5
	2041 No Build	5	0	5
	2041 Build	6	0	5

*Note: Intersection configuration and location changed between 2024 Existing and 2027 No Build Conditions

Measures of Effectiveness
 AM Peak Hour (6:30-7:30)
 9. Gateway Blvd at Carolina Dr

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)						
			Eastbound		Westbound		Northbound	Southbound	
			L	T	L	T	LTR	LT	R
2024 Existing	4.0 (A)	Lane Group	7.6 (A)	0.0 (A)	7.3 (A)	0.0 (A)	8.4 (A)	10.0 (B)	9.0 (A)
		Approach	3.1 (A)		0.2 (A)		8.4 (A)		9.2 (A)
2027 No Build	3.6 (A)	Lane Group	7.5 (A)	0.0 (A)	7.2 (A)	0.0 (A)	8.4 (A)	9.6 (A)	8.8 (A)
		Approach	3.7 (A)		0.1 (A)		8.4 (A)		9.0 (A)
2027 Construction	3.2 (A)	Lane Group	7.6 (A)	0.0 (A)	7.3 (A)	0.0 (A)	8.4 (A)	9.8 (A)	8.9 (A)
		Approach	3.1 (A)		0.1 (A)		8.4 (A)		9.1 (A)
2036 No Build	3.7 (A)	Lane Group	7.6 (A)	0.0 (A)	7.2 (A)	0.0 (A)	8.4 (A)	9.9 (A)	9.0 (A)
		Approach	3.7 (A)		0.1 (A)		8.4 (A)		9.2 (A)
2036 Build	3.6 (A)	Lane Group	7.6 (A)	0.0 (A)	7.3 (A)	0.0 (A)	8.4 (A)	9.9 (A)	9.0 (A)
		Approach	3.5 (A)		0.1 (A)		8.4 (A)		9.2 (A)
2041 No Build	3.7 (A)	Lane Group	7.6 (A)	0.0 (A)	7.3 (A)	0.0 (A)	8.4 (A)	10 (A)	9.0 (A)
		Approach	3.7 (A)		0.1 (A)		8.4 (A)		9.2 (A)
2041 Build	3.6 (A)	Lane Group	7.6 (A)	0.0 (A)	7.3 (A)	0.0 (A)	8.4 (A)	10.1 (B)	9.0 (A)
		Approach	3.6 (A)		0.1 (A)		8.4 (A)		9.2 (A)

95th Percentile Queues - HCM 2000

Scenario	Eastbound	Westbound	Northbound	Southbound	
	LT	LT	LTR	TR	
Storage Length Available (ft)	200	305	0	105	
95 th Percentile Queue Length (ft)	2024 Existing	1	0	0	7
	2027 No Build	1	0	0	4
	2027 Construction	1	0	0	4
	2036 No Build	1	0	0	5
	2036 Build	1	0	0	5
	2041 No Build	1	0	0	6
	2041 Build	1	0	0	6

indicates 95 percentile volume exceeds capacity, queue may be longer.

Measures of Effectiveness
 AM Peak Hour (6:30-7:30)

1a. Prince William Parkway at Clover Hill Rd - East Diverging Diamond Interchange Intersection

Signalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Eastbound		Westbound	Eastbound	Southeastbound
			L	R	T	L	R
2036 No Build	10.7 (B)	Lane Group	12.1	0.1	13.5	10.9	12.5
			(B)	(A)	(B)	(B)	(B)
		Approach	5.7 (A)		13.5 (B)	12.1 (B)	
2036 Build	12.0 (B)	Lane Group	12.9	0.1	14.8	10.9	14.8
			(B)	(A)	(B)	(B)	(B)
		Approach	6.6 (A)		14.8 (B)	14.2 (B)	
2041 No Build	10.8 (B)	Lane Group	12.5	0.1	13.3	11.0	12.8
			(B)	(A)	(B)	(B)	(B)
		Approach	6.0 (A)		13.3 (B)	12.4 (B)	
2041 Build	12.4 (B)	Lane Group	13.3	0.2	15.1	11.0	15.2
			(B)	(A)	(B)	(B)	(B)
		Approach	7.0 (A)		15.1 (B)	14.5 (B)	

95th Percentile Queues- Synchro Lanes, Volumes, Timings

Scenario	Eastbound		Westbound	Eastbound	Southeastbound	
	L	R	T	L	R	
Storage Length Available (ft)						
	900	900	525	240	300	
95th Percentile Queue Length (ft)	2036 No Build	53	0	140	30	77
	2036 Build	80	0	190	30	134
	2041 No Build	56	0	147	32	84
	2041 Build	85	0	198	32	142

Measures of Effectiveness
 AM Peak Hour (6:30-7:30)

1b. Prince William Parkway at Clover Hill Rd - West Diverging Diamond Interchange Intersection

Signalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Northwestbound	Westbound	Northeastbound	Southwestbound	
			L	R	T	L	R
2036 No Build	11.7 (B)	Lane Group	13.2	10.8	8.6	11.3	11.5
			(B)	(B)	(A)	(B)	(B)
		Approach	12.8		8.6	11.4	
			(B)		(A)	(B)	
2036 Build	12.4 (B)	Lane Group	14.6	10.8	7.9	11.4	11.5
			(B)	(B)	(A)	(B)	(B)
		Approach	14.1		7.9	11.5	
			(B)		(A)	(B)	
2041 No Build	11.9 (B)	Lane Group	13.5	10.9	8.7	11.5	11.7
			(B)	(B)	(A)	(B)	(B)
		Approach	13.1		8.7	11.6	
			(B)		(A)	(B)	
2041 Build	12.7 (B)	Lane Group	15.1	10.9	8.3	11.5	11.7
			(B)	(B)	(A)	(B)	(B)
		Approach	14.5		8.3	11.6	
			(B)		(A)	(B)	

95th Percentile Queues- Synchro Lanes, Volumes, Timings

Scenario		Northwestbound	Westbound	Northeastbound	Southwestbound	
		L	R	T	L	R
Storage Length Available (ft)		175	215	525	925	925
95th Percentile Queue Length (ft)	2036 No Build	105	28	28	50	35
	2036 Build	144	28	24	52	35
	2041 No Build	112	30	30	55	37
	2041 Build	153	30	27	56	37

Measures of Effectiveness

AM Peak Hour (6:30-7:30)

1c. Prince William Parkway Southbound On-Ramp

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)
			Southeastbound
			L
2036 No Build	3.2 (A)	Lane Group	9.6 (A)
		Approach	9.6 (A)
2036 Build	2.6 (A)	Lane Group	9.9 (A)
		Approach	9.9 (A)
2041 No Build	3.4 (A)	Lane Group	9.7 (A)
		Approach	9.7 (A)
2041 Build	2.8 (A)	Lane Group	10.0 (A)
		Approach	10.0 (A)

95th Percentile Queues - HCM 2000

Scenario		Southeastbound
		L
Storage Length Available (ft)		200
95th Percentile Queue Length (ft)	2036 No Build	6
	2036 Build	6
	2041 No Build	7
	2041 Build	7

Measures of Effectiveness

AM Peak Hour (6:30-7:30)

1d. Prince William Parkway Northbound On-Ramp

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)
			Northwest
			L
2036 No Build	3.2 (A)	Lane Group	11.8
			(B)
		Approach	11.8
			(B)
2036 Build	4.7 (A)	Lane Group	12.1
			(B)
		Approach	12.1
			(B)
2041 No Build	3.3 (A)	Lane Group	12.4
			(B)
		Approach	12.4
			(B)
2041 Build	4.8 (A)	Lane Group	12.7
			(B)
		Approach	12.7
			(B)

95th Percentile Queues - HCM 2000

Scenario		Northbound
		R
Storage Length Available (ft)		250
95th Percentile Queue Length (ft)	2036 No Build	13
	2036 Build	23
	2041 No Build	15
	2041 Build	26

Measures of Effectiveness
 AM Peak Hour (6:30-7:30)

10. Wakeman Drive at S Satellite Driveway

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Westbound		Northbound	Southbound	
			L	R	TR	L	T
2027 Construction	1.7 (A)	Lane Group	11.0	0.0	0.0	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	11.0		0.0	0.0	
			(B)	(A)	(A)		
2036 Build	0.2 (A)	Lane Group	11.3	0.0	0.0	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	11.3		0.0	0.0	
			(B)	(A)	(A)		
2041 Build	0.2 (A)	Lane Group	11.6	0.0	0.0	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	11.6		0.0	0.0	
			(B)	(A)	(A)		

95th Percentile Queues - HCM 2000

Scenario	Westbound	Northbound	Southbound
	LR	TR	LT
Storage Length Available (ft)	300	365	355
95th Percentile Queue Length (ft)	2027 Construction	9	-
	2036 Build	1	0
	2041 Build	1	0

Measures of Effectiveness

AM Peak Hour (6:30-7:30)

11. Wakeman Drive at N Satellite Driveway

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Westbound		Northbound	Southbound	
			LT	R	TR	LT	T
2027 Construction	3.4 (A)	Lane Group	0.0 (A)	0.0 (A)	0.0 (A)	7.6 (A)	0.0 (A)
		Approach	0.0 (A)		0.0 (A)	4.4 (A)	
		Lane Group	0.0 (A)	0.0 (A)	0.0 (A)	7.5 (A)	0.0 (A)
2036 Build	0.0 (A)	Approach	0.0 (A)		0.0 (A)	0.1 (A)	
		Lane Group	0.0 (A)	0.0 (A)	0.0 (A)	7.5 (A)	0.0 (A)
		Approach	0.0 (A)		0.0 (A)	0.1 (A)	
2041 Build	0.0 (A)	Lane Group	0.0 (A)	0.0 (A)	0.0 (A)	7.5 (A)	0.0 (A)
		Approach	0.0 (A)		0.0 (A)	0.1 (A)	
		Lane Group	0.0 (A)	0.0 (A)	0.0 (A)	7.5 (A)	0.0 (A)

95th Percentile Queues- HCM 2000

Scenario	Westbound	Northbound	Southbound
	LT	TR	LR
Storage Length Available (ft)	225	355	525
95th Percentile Queue Length (ft)	2027 Construction	3	6
	2036 Build	0	0
	2041 Build	0	0

Measures of Effectiveness
 PM Peak Hour (3:15 PM - 4:15 PM)
 1. Prince William Parkway at Clover Hill Rd

Signalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)									
			Eastbound		Westbound		Northbound			Southbound		
			LT	R	LT	R	L	T	R	L	T	R
2024 Existing	31.4 (C)	Lane Group	78.3 (E)	61.2 (E)	71.0 (E)	61.3 (E)	75.8 (E)	24.8 (C)	0.1 (A)	73.6 (E)	25.6 (C)	0.0 (A)
		Approach	69.6 (E)		65.0 (E)		25.2 (C)			28.5 (C)		
2027 No Build	48 (D)	Lane Group	84.9 (F)	62.9 (E)	70.0 (E)	62.4 (E)	77.1 (E)	29.8 (C)	0.1 (A)	80.1 (F)	54.0 (D)	0.0 (A)
		Approach	71.7 (E)		65.1 (E)		31.0 (C)			55.0 (D)		
2027 Construction	115.2 (F)	Lane Group	318.6 (F)	70.1 (E)	696.0 (F)	60.8 (E)	94.7 (F)	40.9 (D)	0.1 (A)	91.9 (F)	139.8 (F)	0.2 (A)
		Approach	196.6 (F)		293.7 (F)		45.5 (D)			125.1 (F)		
2027 Construction with Signal Modifications	117.2 (F)	Lane Group	151.8 (F)	51.6 (D)	66.1 (E)	41.3 (D)	236.5 (F)	53.6 (D)	0.1 (A)	143.1 (F)	175.4 (F)	0.2 (A)
		Approach	102.6 (F)		50.4 (D)		72.0 (E)			158.9 (F)		

95th Percentile Queues - Synchro Lanes, Volumes, Timings

Scenario		Eastbound		Westbound		Northbound			Southbound		
		LT	R	LT	R	L	T	R	L	T	R
Storage Length Available (ft)		1115	1115	1075	1075	470	-	355	470	-	280
95 th Percentile Queue Length (ft)	2024 Existing	163	12	68	48	57	852	0	267	#1306	0
	2027 No Build	246	80	142	65	154	1015	0	291	#1727	0
	2027 Construction	#925	309	#279	65	340	1038	0	295	#1888	0
	2027 Construction with Signal Modifications	#657	325	#153	54	#404	#928	0	#330	#1531	0

indicates 95 percentile volume exceeds capacity, queue may be longer.

Measures of Effectiveness
 PM Peak Hour (3:15 PM - 4:15 PM)
 2. Harry J. Parrish Blvd at Clover Hill Rd

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)					
			Southeastbound		Northwestbound		Southwestbound	
			LT	T	R	L	R	
2024 Existing	6.5 (A)	Lane Group	9.6	9.0	8.6	0.0	0.0	
			(A)	(A)	(A)	(A)	(A)	
		Approach	9.6	8.6		0.0		
			(A)	(A)		(A)		
2027 No Build	7.4 (A)	Lane Group	10.4	9.0	8.5	0.0	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	10.4	8.6		0.0		
			(B)	(A)		(A)		
2027 Construction	12.0 (B)	Lane Group	19.4	9.0	8.5	0.0	0.0	
			(C)	(A)	(A)	(A)	(A)	
		Approach	19.4	8.6		0.0		
			(C)	(A)		(A)		
2036 No Build	7.5 (A)	Lane Group	10.7	9.0	8.6	0.0	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	10.7	8.6		0.0		
			(B)	(A)		(A)		
2036 Build	10.6 (B)	Lane Group	18.7	9.0	8.6	0.0	0.0	
			(C)	(A)	(A)	(A)	(A)	
		Approach	18.7	8.6		0.0		
			(C)	(A)		(A)		
2041 No Build	7.7 (A)	Lane Group	11	9.0	8.6	0.0	0.0	
			(B)	(A)	(A)	(A)	(A)	
		Approach	11	8.6		0.0		
			(B)	(A)		(A)		
2041 Build	11.3 (B)	Lane Group	20	9.0	8.6	0.0	0.0	
			(C)	(A)	(A)	(A)	(A)	
		Approach	20	8.6		0.0		
			(C)	(A)		(A)		

95th Percentile Queues - HCM 2000

Scenario		Southeastbound	Northwestbound		Southwestbound	
		LT	T	R	L	R
Storage Length Available (ft)		1210	405	255	1115	1115
95 th Percentile Queue Length (ft)	2024 Existing	14	1	5	0	0
	2027 No Build	33	0	4	0	0
	2027 Construction	188	0	4	0	0
	2036 No Build	38	0	5	0	0
	2036 Build	174	0	5	0	0
	2041 No Build	42	1	6	0	0
	2041 Build	191	1	6	0	0

Measures of Effectiveness
 PM Peak Hour (3:15 PM - 4:15 PM)
 3. Harry J. Parrish at Wakeman Drive

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)					
			Eastbound	Westbound	Northbound		Southbound	
			LTR	LTR	L	TR	L	TR
2024 Existing	6.9 (A)	Lane Group	9.9	8.5	7.2	0.0	7.4	0
			(A)	(A)	(A)	(A)	(A)	(A)
		Approach	9.9	8.5	0.7		6.4	
			(A)	(A)	(A)		(A)	
2027 No Build	6.8 (A)	Lane Group	9.7	8.3	7.2	0.0	7.4	0
			(A)	(A)	(A)	(A)	(A)	(A)
		Approach	9.7	8.3	0.6		6.6	
			(A)	(A)	(A)		(A)	
2027 Construction	7.4 (A)	Lane Group	22.9	10.8	7.2	0.0	8.5	0
			(C)	(B)	(A)	(A)	(A)	(A)
		Approach	22.9	10.8	0.1		8.3	
			(C)	(B)	(A)		(A)	
2036 No Build	6.9 (A)	Lane Group	10	8.4	7.2	0.0	7.4	0
			(A)	(A)	(A)	(A)	(A)	(A)
		Approach	10	8.4	0.8		6.6	
			(A)	(A)	(A)		(A)	
2036 Build	7.9 (A)	Lane Group	17.6	13.6	7.2	0.0	8.4	0
			(C)	(B)	(A)	(A)	(A)	(A)
		Approach	17.6	13.6	0.1		7.6	
			(C)	(B)	((A)		(A)	
2041 No Build	6.9 (A)	Lane Group	10.2	8.4	7.2	0.0	7.4	0
			(B)	(A)	(A)	(A)	(A)	(A)
		Approach	10.2	8.4	0.7		6.6	
			(B)	(A)	(A)		(A)	
2041 Build	8.1 (A)	Lane Group	18.5	13.8	7.2	0.0	8.5	0
			(C)	(B)	(A)	(A)	(A)	(A)
		Approach	18.5	13.8	0.1		7.6	
			(C)	(B)	((A)		(A)	

95th Percentile Queues - HCM 2000

Scenario		Eastbound	Westbound	Northbound	Southbound
		LTR	LTR	LTR	LTR
Storage Length Available (ft)		140	790	260	235
95 th Percentile Queue Length (ft)	2024 Existing	4	10	0	4
	2027 No Build	2	6	0	3
	2027 Construction	11	80	0	20
	2036 No Build	2	8	0	4
	2036 Build	15	114	0	7
	2041 No Build	3	9	0	5
	2041 Build	16	122	0	7

Measures of Effectiveness

PM Peak Hour (3:15 PM - 4:15 PM)

4. Wakeman Drive at Frontage Rd Exit

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)			
			Eastbound		Northbound	Southbound
			L	R	T	T
2024 Existing	1.5 (A)	Lane Group	8.8	0.0	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	8.8		0.0	0.0
			(A)		(A)	(A)
2027 No Build	0.9 (A)	Lane Group	8.7	0.0	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	8.7		0.0	0.0
			(A)		(A)	(A)
2027 Construction	8.7 (A)	Lane Group	10.0	0.0	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	10.0		0.0	0.0
			(A)		(A)	(A)
2036 No Build	0.9 (A)	Lane Group	8.7	0.0	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	8.7		0.0	0.0
			(A)		(A)	(A)
2036 Build	10.0 (A)	Lane Group	11.2	0.0	0.0	0.0
			(B)	(A)	(A)	(A)
		Approach	11.2		0.0	0.0
			(B)		(A)	(A)
2041 No Build	1.0 (A)	Lane Group	8.8	0.0	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	8.8		0.0	0.0
			(A)		(A)	(A)
2041 Build	10.0 (A)	Lane Group	11.3	0.0	0.0	0.0
			(B)	(A)	(A)	(A)
		Approach	11.3		0.0	0.0
			(B)		(A)	(A)

95th Percentile Queues - HCM 2000

Scenario		Eastbound		Northbound	Southbound
		L	R	T	T
Storage Length Available (ft)		170	170	845	260
95 th Percentile Queue Length (ft)	2024 Existing	1	0	0	0
	2027 No Build	0	0	0	0
	2027 Construction	27	0	0	0
	2036 No Build	0	0	0	0
	2036 Build	49	0	0	0
	2041 No Build	1	0	0	0
	2041 Build	50	0	0	0

Measures of Effectiveness
 PM Peak Hour (3:15 PM - 4:15 PM)
 5. Wakeman Drive at Frontage Road Entrance

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)			
			Eastbound	Northbound	Southbound	
			LR	LT	T	R
2024 Existing	1.7 (A)	Lane Group	9.5 (A)	0.8 (A)	0.0 (A)	0.0 (A)
		Approach	9.5 (A)	0.8 (A)	0.0 (A)	
2027 No Build	1.2 (A)	Lane Group	9.3 (A)	0.4 (A)	0.0 (A)	0.0 (A)
		Approach	9.3 (A)	0.4 (A)	0.0 (A)	
2027 Construction	3.5 (A)	Lane Group	-	6.3 (A)	0.0 (A)	0.0 (A)
		Approach	-	6.3 (A)	0.0 (A)	
2036 No Build	1.2 (A)	Lane Group	9.4 (A)	0.5 (A)	0.0 (A)	0.0 (A)
		Approach	9.4 (A)	0.5 (A)	0.0 (A)	
2036 Build	4.8 (A)	Lane Group	-	6.3 (A)	0.0 (A)	0.0 (A)
		Approach	-	6.3 (A)	0.0 (A)	
2041 No Build	1.0 (A)	Lane Group	10.3 (B)	0.9 (A)	0.0 (A)	0.0 (A)
		Approach	10.2 (B)	0.9 (A)	0.0 (A)	
2041 Build	4.7 (A)	Lane Group	-	6.2 (A)	0.0 (A)	0.0 (A)
		Approach	-	6.2 (A)	0.0 (A)	

*Note: EB approach eliminated under Construction and Build Conditions

95th Percentile Queues - HCM 2000

Scenario		Eastbound	Northbound	Southbound	
		LR	L	T	R
Storage Length Available (ft)		150	235	875	165
95 th Percentile Queue Length (ft)	2024 Existing	3	1	0	0
	2027 No Build	2	0	0	0
	2027 Construction	-	19	0	0
	2036 No Build	2	0	0	0
	2036 Build	-	23	0	0
	2041 No Build	1	1	0	0
	2041 Build	-	23	0	0

*Note: EB approach eliminated under Construction and Build Conditions

Measures of Effectiveness
 PM Peak Hour (3:15 PM - 4:15 PM)
 6. Wakeman Drive at Employee Lot

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Southeastbound		Northwestbound		Southwestbound
			L	T	T	R	LR
2024 Existing	2.5 (A)	Lane Group	0.0	0.0	0.0	0.0	9.1
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0		9.1
			(A)		(A)		(A)
2027 No Build	2.5 (A)	Lane Group	0.0	0.0	0.0	0.0	9.2
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0		9.2
			(A)		(A)		(A)
2027 Construction	1.9 (A)	Lane Group	0.0	0.0	0.0	0.0	10.1
			(A)	(A)	(A)	(A)	(B)
		Approach	0.0		0		10.1
			(A)		(A)		(B)
2036 No Build	2.6 (A)	Lane Group	0.0	0.0	0.0	0.0	9.4
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0		9.4
			(A)		(A)		(A)
2036 Build	2.4 (A)	Lane Group	0.0	0.0	0.0	0.0	9.7
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0		9.7
			(A)		(A)		(A)
2041 No Build	2.6 (A)	Lane Group	0.0	0.0	0.0	0.0	9.5
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0		9.5
			(A)		(A)		(A)
2041 Build	2.4 (A)	Lane Group	0.0	0.0	0.0	0.0	9.8
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0		9.8
			(A)		(A)		(A)

95th Percentile Queues - HCM 2000

Scenario		Southeastbound	Northwestbound	Southwestbound
		LT	TR	LR
Storage Length Available (ft)		325	170	255
95 th Percentile Queue Length (ft)	2024 Existing	0	0	5
	2027 No Build	0	0	6
	2027 Construction	0	0	8
	2036 No Build	0	0	7
	2036 Build	0	0	8
	2041 No Build	0	0	8
	2041 Build	0	0	9

Measures of Effectiveness

PM Peak Hour (3:15 PM - 4:15 PM)

7. Wakeman Drive at Observation Rd

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Eastbound		Northbound		Southbound
			L	R	L	T	TR
2024 Existing	4.2 (A)	Lane Group	11.2 (B)	8.8 (A)	7.5 (A)	0.0 (A)	0.0 (A)
		Approach	10.0 (A)		3.6 (A)		0.0 (A)
2027 No Build	3.9 (A)	Lane Group	10.7 (B)	8.7 (A)	7.5 (A)	0.0 (A)	0.0 (A)
		Approach	9.5 (A)		3.5 (A)		0.0 (A)
2027 Construction	4.9 (A)	Lane Group	13.6 (B)	8.8 (A)	7.7 (A)	0.0 (A)	0.0 (A)
		Approach	10.3 (B)		4.8 (A)		0.0 (A)
2036 No Build	4.0 (A)	Lane Group	11.2 (B)	8.8 (A)	7.5 (A)	0.0 (A)	0.0 (A)
		Approach	9.8 (A)		3.5 (A)		0.0 (A)
2036 Build	4.3 (A)	Lane Group	11.9 (B)	8.9 (A)	7.6 (A)	0.0 (A)	0.0 (A)
		Approach	9.8 (A)		3.8 (A)		0.0 (A)
2041 No Build	4.0 (A)	Lane Group	11.6 (B)	8.8 (A)	7.5 (A)	0.0 (A)	0.0 (A)
		Approach	9.9 (A)		3.5 (A)		0.0 (A)
2041 Build	4.4 (A)	Lane Group	12.3 (B)	8.9 (A)	7.6 (A)	0.0 (A)	0.0 (A)
		Approach	10.0 (A)		3.8 (A)		0.0 (A)

95th Percentile Queues - HCM 2000

Scenario		Eastbound		Northbound		Southbound
		L	R	L	T	TR
Storage Length Available (ft)		105	865	145	620	240
95 th Percentile Queue Length (ft)	2024 Existing	6	3	4	0	0
	2027 No Build	3	3	4	0	0
	2027 Construction	4	4	10	0	0
	2036 No Build	3	3	4	0	0
	2036 Build	4	5	6	0	0
	2041 No Build	4	4	5	0	0
	2041 Build	5	5	6	0	0

Measures of Effectiveness
 PM Peak Hour (3:15 PM - 4:15 PM)
 8. Observation Rd at Piper Ln

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)			
			Westbound	Northbound	Southbound	
			LR	TR	L	T
2024 Existing	2.6 (A)	Lane Group	9.7	0.0	7.4	0.0
			(A)	(A)	(A)	(A)
		Approach	9.7	0.0	2.0	
			(A)	(A)	(A)	
2027 No Build	5.8 (A)	Lane Group	9.2	0.0	7.4	0.0
			(A)	(A)	(A)	(A)
		Approach	9.2	0.0	3.6	
			(A)	(A)	(A)	
2027 Construction	7.2 (A)	Lane Group	9.6	0.0	7.4	0.0
			(A)	(A)	(A)	(A)
		Approach	9.6	0.0	4.3	
			(A)	(A)	(A)	
2036 No Build	5.9 (A)	Lane Group	9.4	0.0	7.5	0.0
			(A)	(A)	(A)	(A)
		Approach	9.4	0.0	3.6	
			(A)	(A)	(A)	
2036 Build	6.3 (A)	Lane Group	9.6	0.0	7.5	0.0
			(A)	(A)	(A)	(A)
		Approach	9.6	0.0	4.4	
			(A)	(A)	(A)	
2041 No Build	5.9 (A)	Lane Group	9.5	0.0	7.5	0.0
			(A)	(A)	(A)	(A)
		Approach	9.5	0.0	3.6	
			(A)	(A)	(A)	
2041 Build	6.4 (A)	Lane Group	9.7	0.0	7.5	0.0
			(A)	(A)	(A)	(A)
		Approach	9.7	0.0	4.3	
			(A)	(A)	(A)	

*Note: Intersection configuration and location changed between 2024 Existing and 2027 No Action Conditions

95th Percentile Queues - HCM 2000

Scenario	Westbound	Northbound	Southbound	
	LR	TR	LT	
Storage Length Available (ft)	1630	640	600	
95 th Percentile Queue Length (ft)	2024 Existing	4	0	2
	2027 No Build	10	0	2
	2027 Construction	21	0	2
	2036 No Build	12	0	2
	2036 Build	14	0	3
	2041 No Build	13	0	2
	2041 Build	16	0	3

Measures of Effectiveness
 PM Peak Hour (3:15 PM - 4:15 PM)
 9. Gateway Blvd at Carolina Dr

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)						
			Eastbound		Westbound		Northbound	Southbound	
			L	T	L	T	LTR	LT	R
2024 Existing	5.9 (A)	Lane Group	7.4 (A)	0.0 (A)	7.6 (A)	0.0 (A)	10.1 (B)	11.8 (B)	8.7 (A)
		Approach	3.5 (A)		1.7 (A)		10.1 (B)	10.5 (B)	
2027 No Build	5.4 (A)	Lane Group	7.4 (A)	0.0 (A)	7.5 (A)	0.0 (A)	9.4 (A)	10.9 (B)	8.6 (A)
		Approach	4.0 (A)		1.4 (A)		9.4 (A)	9.9 (A)	
2027 Construction	4.9 (A)	Lane Group	7.4 (A)	0.0 (A)	7.6 (A)	0.0 (A)	9.5 (A)	11.2 (B)	8.7 (A)
		Approach	3.3 (A)		1.3 (A)		9.5 (A)	10.1 (B)	
2036 No Build	5.5 (A)	Lane Group	7.5 (A)	0.0 (A)	7.6 (A)	0.0 (A)	9.8 (A)	11.6 (B)	8.7 (A)
		Approach	4.0 (A)		1.4 (A)		9.8 (A)	10.3 (B)	
2036 Build	5.3 (A)	Lane Group	7.5 (A)	0.0 (A)	7.6 (A)	0.0 (A)	9.9 (A)	11.8 (B)	8.7 (A)
		Approach	3.7 (A)		1.3 (A)		9.9 (A)	10.4 (B)	
2041 No Build	5.6 (A)	Lane Group	7.5 (A)	0.0 (A)	7.6 (A)	0.0 (A)	9.8 (A)	12.1 (B)	8.7 (A)
		Approach	4.0 (A)		1.4 (A)		9.8 (A)	10.6 (B)	
2041 Build	5.4 (A)	Lane Group	7.5 (A)	0.0 (A)	7.6 (A)	0.0 (A)	9.9 (A)	12.3 (B)	8.8 (A)
		Approach	3.8 (A)		1.3 (A)		9.9 (A)	10.7 (B)	

95th Percentile Queues - HCM 2000

Scenario	Eastbound	Westbound	Northbound	Southbound	
	LT	LT	LTR	TR	
Storage Length Available (ft)	200	305	0	105	
95 th Percentile Queue Length (ft)	2024 Existing	3	1	4	10
	2027 No Build	3	1	1	6
	2027 Construction	3	1	1	6
	2036 No Build	4	1	2	8
	2036 Build	4	1	2	8
	2041 No Build	5	1	2	9
	2041 Build	5	1	2	9

Measures of Effectiveness

PM Peak Hour (3:15 PM - 4:15 PM)

1a. Prince William Parkway at Clover Hill Rd - East Diverging Diamond Interchange Intersection

Signalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Eastbound		Westbound	Eastbound	Southeastbound
			L	R	T	L	R
2036 No Build	8.2 (A)	Lane Group	11.9 (B)	0.2 (A)	9.9 (A)	12.5 (B)	10.9 (B)
		Approach	5.0 (A)		9.9 (A)	12.2 (B)	
2036 Build	11.4 (B)	Lane Group	15.2 (B)	4.0 (A)	13.0 (B)	12.5 (B)	14.1 (B)
		Approach	9.6 (A)		13.0 (B)	13.4 (B)	
2041 No Build	8.4 (A)	Lane Group	12.0 (B)	0.2 (A)	9.8 (A)	12.8 (B)	10.9 (B)
		Approach	5.2 (A)		9.8 (A)	12.5 (B)	
2041 Build	10.6 (B)	Lane Group	15.5 (B)	0.4 (A)	13.0 (B)	12.8 (B)	14.2 (B)
		Approach	8.0 (A)		13.0 (B)	13.5 (B)	

95th Percentile Queues - Synchro Lanes, Volumes, Timings

Scenario		Eastbound		Westbound	Eastbound	Southeastbound
		L	R	T	L	R
Storage Length Available (ft)		900	900	525	240	300
95th Percentile Queue Length (ft)	2036 No Build	70	0	45	88	26
	2036 Build	168	0	130	88	118
	2041 No Build	75	0	46	96	27
	2041 Build	173	0	129	96	119

Measures of Effectiveness

PM Peak Hour (3:15 PM - 4:15 PM)

1b. Prince William Parkway at Clover Hill Rd - West Diverging Diamond Interchange Intersection

Signalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Northwestbound	Westbound	Northeastbound	Southwestbound	
			L	R	T	L	R
2036 No Build	11.1 (B)	Lane Group	11.2 (B)	11.4 (B)	11.0 (B)	11.0 (B)	11.0 (B)
		Approach	11.3 (B)		11.0 (B)	11.0 (B)	
2036 Build	11.7 (B)	Lane Group	11.2 (B)	11.8 (B)	12.9 (B)	11.0 (B)	11.0 (B)
		Approach	11.3 (B)		12.9 (B)	11.0 (B)	
2041 No Build	11.2 (B)	Lane Group	11.4 (B)	11.7 (B)	11.1 (B)	11.1 (B)	11.1 (B)
		Approach	11.5 (B)		11.1 (B)	11.1 (B)	
2041 Build	11.9 (B)	Lane Group	11.4 (B)	12.3 (B)	13.0 (B)	11.1 (B)	11.1 (B)
		Approach	11.6 (B)		13.0 (B)	11.1 (B)	

95th Percentile Queues - Synchro Lanes, Volumes, Timings

Scenario		Northwestbound	Westbound	Northeastbound	Southwestbound	
		L	R	T	L	R
Storage Length Available (ft)		175	215	525	925	925
95th Percentile Queue Length (ft)	2036 No Build	36	103	41	41	28
	2036 Build	36	102	101	42	28
	2041 No Build	39	112	42	45	30
	2041 Build	39	114	102	46	30

Measures of Effectiveness

PM Peak Hour (3:15 PM - 4:15 PM)

1c. Prince William Parkway Southbound On-Ramp

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)	
			Southeastbound	
			L	(B)
2036 No Build	2.3 (A)	Lane Group	10.2	(B)
		Approach	10.2	(B)
2036 Build	1.7 (A)	Lane Group	11.6	(B)
		Approach	11.6	(B)
2041 No Build	2.5 (A)	Lane Group	10.4	(B)
		Approach	10.4	(B)
2041 Build	1.9 (A)	Lane Group	11.8	(B)
		Approach	11.8	(B)

95th Percentile Queues - HCM 2000

Scenario		Southeastbound
		L
Storage Length Available (ft)		200
95th Percentile Queue Length (ft)	2036 No Build	7
	2036 Build	9
	2041 No Build	8
	2041 Build	11

Measures of Effectiveness

PM Peak Hour (3:15 PM - 4:15 PM)

1d. Prince William Parkway Northbound On-Ramp

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)
			Northwest
			L
2036 No Build	4.5 (A)	Lane Group	10.2 (B)
		Approach	10.2 (B)
2036 Build	8.5 (A)	Lane Group	12.4 (B)
		Approach	12.4 (B)
2041 No Build	4.5 (A)	Lane Group	10.4 (B)
		Approach	10.4 (B)
2041 Build	8.6 (A)	Lane Group	12.8 (B)
		Approach	12.8 (B)

95th Percentile Queues - HCM 2000

Scenario	Northbound	
	R	
Storage Length Available (ft)	250	
95th Percentile Queue Length (ft)	2036 No Build	13
	2036 Build	52
	2041 No Build	15
	2041 Build	56

Measures of Effectiveness

PM Peak Hour (3:15 PM - 4:15 PM)

10. Wakeman Drive at S Satellite Driveway

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Westbound		Northbound	Southbound	
			L	R	TR	L	T
2027 Construction	5.3 (A)	Lane Group	11.6	0.0	0.0	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	11.6		0.0		0.0
			(B)		(A)		(A)
2036 Build	0.6 (A)	Lane Group	10.6	0.0	0.0	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	10.6		0.0		0.0
			(B)		(A)		(A)
2041 Build	0.5 (A)	Lane Group	10.8	0.0	0.0	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	10.8		0.0		0.0
			(B)		(A)		(A)

95th Percentile Queues - HCM 2000

Scenario		Westbound	Northbound	Southbound
		LR	TR	LT
Storage Length Available (ft)		300	365	355
95th Percentile Queue Length (ft)	2027 Construction	28	0	0
	2036 Build	2	0	0
	2041 Build	2	0	0

Measures of Effectiveness

PM Peak Hour (3:15 PM - 4:15 PM)

11. Wakeman Drive at N Satellite Driveway

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Westbound		Northbound	Southbound	
			L	R	TR	L	T
2027 Construction	3.1 (A)	Lane Group	9.3	0.0	0.0	7.4	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	9.3		0.0		0.1
			(A)		(A)		(A)
2036 Build	0.1 (A)	Lane Group	9.0	0.0	0.0	7.5	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	9.0		0.0		0.1
			(A)		(A)		(A)
2041 Build	0.1 (A)	Lane Group	9.1	0.0	0.0	7.5	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	9.1		0.0		0.1
			(A)		(A)		(A)

95th Percentile Queues - HCM 2000

Scenario		Westbound	Northbound	Southbound
		LR	TR	LT
Storage Length Available (ft)		225	355	525
95th Percentile Queue Length (ft)	2027 Construction	10	0	0
	2036 Build	0	0	0
	2041 Build	0	0	0

Measures of Effectiveness

Sat Peak Hour (1:00 PM - 2:00 PM)

1. Prince William Parkway at Clover Hill Rd

Signalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)									
			Eastbound		Westbound		Northbound			Southbound		
			LT	R	LT	R	L	T	R	L	T	R
2024 Existing	21.2 (C)	Lane Group	53.7	52.0	57.0	52.8	64.9	20.2	0.0	56.2	11.1	0.0
			(D)	(D)	(E)	(D)	(E)	(C)	(A)	(E)	(B)	(A)
		Approach	52.8		54.0		20.4			15.0		
			(D)	(D)	(C)	(B)						

95th Percentile Queues - Synchro Lanes, Volumes, Timings

Scenario		Eastbound		Westbound		Northbound			Southbound		
		LT	R	LT	R	L	T	R	L	T	R
Storage Length Available (ft)		1115	1115	1075	1075	470	-	355	470	-	280
95 th Percentile Queue Length (ft)	2024 Existing	30	0	82	56	43	646	0	217	433	0

indicates 95 percentile volume exceeds capacity, queue may be longer.

Measures of Effectiveness
 Sat Peak Hour (1:00 PM - 2:00 PM)
 2. Harry J. Parrish Blvd at Clover Hill Rd

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Southeastbound	Northwestbound		Southwestbound	
			LT	T	R	L	R
2024 Existing	4.4 (A)	Lane Group	8.8	9.1	8.3	7.2	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	8.8	8.7		0.4	
			(A)	(A)		(A)	
2036 No Build	4.3 (A)	Lane Group	8.8	9.0	8.3	7.2	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	8.8	8.7		0.3	
			(A)	(A)		(A)	
2036 Build	5.3 (A)	Lane Group	10.5	9.0	8.3	7.2	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	10.5	8.7		0.1	
			(B)	(A)		(A)	
2041 No Build	4.3 (A)	Lane Group	8.8	9.0	8.3	7.2	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	8.8	8.7		0.3	
			(A)	(A)		(A)	
2041 Build	5.4 (A)	Lane Group	11	9.0	8.3	7.2	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	11	8.7		0.0	
			(B)	(A)		(A)	

95th Percentile Queues - HCM 2000

Scenario		Southeastbound	Northwestbound		Southwestbound	
		LT	T	R	L	R
Storage Length Available (ft)		1210	405	255	1115	1115
95 th Percentile Queue Length (ft)	2024 Existing	4	0	0	0	0
	2036 No Build	4	0	0	0	0
	2036 Build	40	0	0	0	0
	2041 No Build	5	0	0	0	0
	2041 Build	50	0	0	0	0

Measures of Effectiveness
 Sat Peak Hour (1:00 PM - 2:00 PM)
 3. Harry J. Parrish at Wakeman Drive

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)					
			Eastbound	Westbound	Northbound		Southbound	
			LTR	LTR	L	TR	L	TR
2024 Existing	5.8 (A)	Lane Group	9.5	7.2	7.2	0.0	7.3	0.0
			(A)	(A)	(A)	(A)	(A)	(A)
		Approach	9.5	7.2	1.0		5.6	
			(A)	(A)	(A)		(A)	
2036 No Build	6.7 (A)	Lane Group	9.2	8.8	0.4	0.0	6.0	0.0
			(A)	(A)	(A)	(A)	(A)	(A)
		Approach	9.2	8.8	0.4		6.0	
			(A)	(A)	(A)		(A)	
2036 Build	7.3 (A)	Lane Group	15.7	10.2	7.2	0.0	7.9	0.0
			(C)	(B)	(A)	(A)	(A)	(A)
		Approach	15.7	10.2	0.0		7.7	
			(C)	(B)	(A)		(A)	
2041 No Build	6.0 (A)	Lane Group	9.3	7.4	7.2	0.0	7.3	0.0
			(A)	(A)	(A)	(A)	(A)	(A)
		Approach	9.3	7.4	0.4		5.9	
			(A)	(A)	(A)		(A)	
2041 Build	7.6 (A)	Lane Group	17.5	11	7.2	0.0	8.1	0.0
			(C)	(B)	(A)	(A)	(A)	(A)
		Approach	17.5	11	0.0		7.8	
			(C)	(B)	(A)		(A)	

*Note: EB Leg eliminated under Build Conditions

95th Percentile Queues - HCM 2000

Scenario	Eastbound	Westbound	Northbound	Southbound	
	LTR	LTR	LTR	LTR	
Storage Length Available (ft)	140	790	260	235	
95 th Percentile Queue Length (ft)	2024 Existing	2	5	0	2
	2036 No Build	1	5	0	1
	2036 Build	6	52	0	11
	2041 No Build	1	5	0	2
	2041 Build	8	76	0	12

Measures of Effectiveness
 Sat Peak Hour (1:00 PM - 2:00 PM)
 4. Wakeman Drive at Frontage Rd Exit

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)			
			Eastbound		Northbound	Southbound
			L	R	T	T
2024 Existing	2.1 (A)	Lane Group	8.7	8.4	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	8.6		0.0	0.0
			(A)		(A)	(A)
2036 No Build	1.7 (A)	Lane Group	8.7	8.4	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	8.6		0.0	0.0
			(A)		(A)	(A)
2036 Build	8.0 (A)	Lane Group	9.5	8.4	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	9.5		0.0	0.0
			(A)		(A)	(A)
2041 No Build	1.7 (A)	Lane Group	8.7	8.4	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	8.7		0.0	0.0
			(A)		(A)	(A)
2041 Build	8.4 (A)	Lane Group	9.8	8.4	0.0	0.0
			(A)	(A)	(A)	(A)
		Approach	9.8		0.0	0.0
			(A)		(A)	(A)

95th Percentile Queues - HCM 2000

Scenario		Eastbound		Northbound	Southbound
		L	R	T	T
Storage Length Available (ft)		170	170	845	260
95 th Percentile Queue Length (ft)	2024 Existing	1	0	0	0
	2036 No Build	1	0	0	0
	2036 Build	16	0	0	0
	2041 No Build	1	0	0	0
	2041 Build	22	0	0	0

Measures of Effectiveness
 Sat Peak Hour (1:00 PM - 2:00 PM)
 5. Wakeman Drive at Frontage Road Entrance

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Eastbound	Northbound		Southbound	
			LR	L	T	T	R
2024 Existing	2.0 (A)	Lane Group	8.9	1.7	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	8.9	1.7		0.0	
			(A)	(A)		(A)	
2036 No Build	1.5 (A)	Lane Group	9.0	1.5	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	9.0	1.5		0.0	
			(A)	(A)		(A)	
2036 Build	2.3 (A)	Lane Group	-	3.7	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	-	3.7		0.0	
			(A)	(A)		(A)	
2041 No Build	1.5 (A)	Lane Group	9.0	1.5	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	9.0	1.5		0.0	
			(A)	(A)		(A)	
2041 Build	2.9 (A)	Lane Group	-	4.5	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	-	4.5		0.0	
			(A)	(A)		(A)	

*Note: EB approach eliminated under Build Conditions

95th Percentile Queues - HCM 2000

Scenario		Eastbound	Northbound	Southbound	
		LR	L	T	R
Storage Length Available (ft)		150	235	875	165
95 th Percentile Queue Length (ft)	2024 Existing	1	1	0	0
	2036 No Build	1	0	0	0
	2036 Build	-	9	0	0
	2041 No Build	1	1	0	0
	2041 Build	-	13	0	0

*Note: EB approach eliminated under Build Conditions

Measures of Effectiveness
 Sat Peak Hour (1:00 PM - 2:00 PM)
 6. Wakeman Drive at Employee Lot

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Southeastbound		Northwestbound	Southwestbound	
			L	T	T	R	LR
2024 Existing	0.4 (A)	Lane Group	0.0	0.0	0.0	0.0	8.6
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0		8.6
			(A)		(A)		(A)
2036 No Build	0.4 (A)	Lane Group	0.0	0.0	0.0	0.0	8.6
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0		8.6
			(A)		(A)		(A)
2036 Build	6.3 (A)	Lane Group	7.8	0.0	0.0	0.0	13.0
			(A)	(A)	(A)	(A)	(B)
		Approach	4.5		0		13.0
			(A)		(A)		(B)
2041 No Build	0.4 (A)	Lane Group	0.0	0.0	0.0	0.0	8.7
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0		8.7
			(A)		(A)		(A)
2041 Build	6.2 (A)	Lane Group	7.8	0.0	0.0	0.0	13.2
			(A)	(A)	(A)	(A)	(B)
		Approach	4.2		0		13.2
			(A)		(A)		(B)

95th Percentile Queues - HCM 2000

Scenario		Southeastbound/Northwestbound		Southwestbound
		LT	TR	LR
Storage Length Available (ft)		325	170	255
95 th Percentile Queue Length (ft)	2024 Existing	0	0	0
	2036 No Build	0	0	0
	2036 Build	5	0	38
	2041 No Build	0	0	0
	2041 Build	5	0	39

Measures of Effectiveness
 Sat Peak Hour (1:00 PM - 2:00 PM)
 7. Wakeman Drive at Observation Rd

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Eastbound		Northbound		Southbound
			L	R	L	T	TR
2024 Existing	4.7 (A)	Lane Group	9.5	8.5	7.3	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	8.9		4.1		0.0
			(A)		(A)		(A)
2036 No Build	4.0 (A)	Lane Group	9.4	8.5	7.3	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	8.8		4.0		0.0
			(A)		(A)		(A)
2036 Build	5.7 (A)	Lane Group	11.0	8.9	7.5	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	9.1		5.4		0.0
			(A)		(A)		(A)
2041 No Build	4.0 (A)	Lane Group	9.5	8.5	7.3	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	8.8		4.1		0.0
			(A)		(A)		(A)
2041 Build	5.6 (A)	Lane Group	11.2	8.9	7.5	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	9.1		5.3		0.0
			(A)		(A)		(A)

95th Percentile Queues - HCM 2000

Scenario		Eastbound		Northbound		Southbound
		L	R	L	T	TR
Storage Length Available (ft)		105	865	145	620	240
95 th Percentile Queue Length (ft)	2024 Existing	2	2	2	0	0
	2036 No Build	1	2	1	0	0
	2036 Build	1	8	6	0	0
	2041 No Build	1	2	2	0	0
	2041 Build	2	8	6	0	0

Measures of Effectiveness
 Sat Peak Hour (1:00 PM - 2:00 PM)
 8. Observation Rd at Piper Ln

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)			
			Westbound	Northbound	Southbound	
			LR	TR	L	T
2024 Existing	1.3 (A)	Lane Group	8.6	0.0	7.3	0.0
			(A)	(A)	(A)	(A)
		Approach	8.6	0.0	0.5	
			(A)	(A)	(A)	
2036 No Build	6.4 (A)	Lane Group	8.5	0.0	7.3	0.0
			(A)	(A)	(A)	(A)
		Approach	8.5	0.0	6.0	
			(A)	(A)	(A)	
2036 Build	7.6 (A)	Lane Group	8.8	0.0	7.4	0.0
			(A)	(A)	(A)	(A)
		Approach	8.8	0.0	7.0	
			(A)	(A)	(A)	
2041 No Build	6.3 (A)	Lane Group	8.5	0.0	7.3	0.0
			(A)	(A)	(A)	(A)
		Approach	8.5	0.0	5.9	
			(A)	(A)	(A)	
2041 Build	7.4 (A)	Lane Group	8.8	0.0	7.4	0.0
			(A)	(A)	(A)	(A)
		Approach	8.8	0.0	7.4	
			(A)	(A)	(A)	

*Note: Intersection configuration and location changed between 2024 Existing and 2023 No Build Conditions

95th Percentile Queues - HCM 2000

Scenario	Westbound	Northbound	Southbound
	LR	TR	LT
Storage Length Available (ft)	1630	640	600
95 th Percentile Queue Length (ft)	2024 Existing	1	0
	2036 No Build	3	0
	2036 Build	9	0
	2041 No Build	3	0
	2041 Build	10	0

*Note: Intersection configuration and location changed between 2024 Existing and 2023 No Build Conditions

Measures of Effectiveness
 Sat Peak Hour (1:00 PM - 2:00 PM)
 9. Gateway Blvd at Carolina Dr

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)						
			Eastbound		Westbound		Northbound	Southbound	
			L	T	L	T	LTR	LT	R
2024 Existing	4.7 (A)	Lane Group	7.3 (A)	0.0 (A)	7.3 (A)	0.0 (A)	10.0 (A)	9.6 (A)	8.5 (A)
		Approach	2.8 (A)		1.2 (A)		10.0 (A)	9.1 (A)	
		Lane Group	7.3 (A)	0.0 (A)	7.2 (A)	0.0 (A)	9.8 (A)	9.4 (A)	8.5 (A)
2036 No Build	5.2 (A)	Approach	3.9 (A)		0.8 (A)		9.8 (A)	9.1 (A)	
		Lane Group	7.4 (A)	0.0 (A)	7.3 (A)	0.0 (A)	10 (A)	9.6 (A)	8.5 (A)
		Approach	2.8 (A)		0.6 (A)		10 (A)	9.2 (A)	
2041 No Build	5.1 (A)	Lane Group	7.3 (A)	0.0 (A)	7.3 (A)	0.0 (A)	9.9 (A)	9.5 (A)	8.5 (A)
		Approach	3.9 (A)		0.8 (A)		9.9 (A)	9.1 (A)	
		Lane Group	7.4 (A)	0.0 (A)	7.3 (A)	0.0 (A)	10.1 (B)	9.8 (A)	8.6 (A)
2041 Build	4.4 (A)	Approach	2.9 (A)		0.6 (A)		10.1 (B)	9.4 (A)	

95th Percentile Queues - HCM 2000

Scenario	Eastbound	Westbound	Northbound	Southbound	
	LT	LT	LTR	TR	
Storage Length Available (ft)	200	305	0	105	
95 th Percentile Queue Length (ft)	2024 Existing	1	0	0	3
	2036 No Build	1	0	0	4
	2036 Build	1	0	0	4
	2041 No Build	1	0	0	4
	2041 Build	1	0	0	5

Measures of Effectiveness

Sat Peak Hour (1:00 PM - 2:00 PM)

1a. Prince William Parkway at Clover Hill Rd - East Diverging Diamond Interchange Intersection

Signalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Eastbound		Westbound	Eastbound	Southeastbound
			L	R	T	L	R
2036 No Build	10.0 (A)	Lane Group	10.4	0.0	8.1	12.0	10.5
			(B)	(A)	(A)	(B)	(B)
		Approach	4.6		8.1	11.8	
			(A)		(A)	(B)	
2036 Build	10.0 (A)	Lane Group	12.3	0.1	11.4	12.0	12.3
			(B)	(A)	(B)	(B)	(B)
		Approach	7.1		11.4	12.2	
			(A)		(B)	(B)	
2041 No Build	10.1 (B)	Lane Group	10.4	0.0	8.1	12.2	10.5
			(B)	(A)	(A)	(B)	(B)
		Approach	4.4		8.1	12.0	
			(A)		(A)	(B)	
2041 Build	10.3 (B)	Lane Group	12.6	0.1	11.9	12.2	12.9
			(B)	(A)	(B)	(B)	(B)
		Approach	7.3		11.9	12.6	
			(A)		(B)	(B)	

95th Percentile Queues - Synchro Lanes, Volumes, Timings

Scenario	Eastbound		Westbound	Eastbound	Southeastbound	
	L	R	T	L	R	
Storage Length Available (ft)	900	900	525	240	300	
95th Percentile Queue Length (ft)	2036 No Build	16	0	16	74	19
	2036 Build	87	0	84	74	76
	2041 No Build	17	0	17	81	20
	2041 Build	99	0	98	81	92

Measures of Effectiveness

Sat Peak Hour (1:00 PM - 2:00 PM)

1b. Prince William Parkway at Clover Hill Rd - West Diverging Diamond Interchange Intersection

Signalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Northwestbound	Westbound	Northeastbound	Southwestbound	
			L	R	T	L	R
2036 No Build	12.0 (B)	Lane Group	10.4	10.9	13.8	10.7	11.2
			(B)	(B)	(B)	(B)	(B)
		Approach	10.8		13.8	11.1	
			(B)		(B)	(B)	
2036 Build	10.9 (B)	Lane Group	11.6	10.9	10.2	11.1	11.2
			(B)	(B)	(B)	(B)	(B)
		Approach	11.4		10.2	11.2	
			(B)		(B)	(B)	
2041 No Build	12.1 (B)	Lane Group	10.4	11.0	14.0	10.8	11.3
			(B)	(B)	(B)	(B)	(B)
		Approach	10.8		14.0	11.2	
			(B)		(B)	(B)	
2041 Build	11.1 (B)	Lane Group	12.0	11.0	10.2	11.1	11.3
			(B)	(B)	(B)	(B)	(B)
		Approach	11.7		10.2	11.2	
			(B)		(B)	(B)	

95th Percentile Queues - Synchro Lanes, Volumes, Timings

Scenario	Northwestbound	Westbound	Northeastbound	Southwestbound		
	L	R	T	L	R	
Storage Length Available (ft)	175	215	525	925	925	
95th Percentile Queue Length (ft)	2036 No Build	16	31	109	30	32
	2036 Build	63	31	77	44	32
	2041 No Build	17	33	119	33	34
	2041 Build	74	33	82	47	34

Measures of Effectiveness

Sat Peak Hour (1:00 PM - 2:00 PM)

1c. Prince William Parkway Southbound On-Ramp

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)
			Southeastbound
2036 No Build	5.4 (A)	Lane Group	L
			8.8 (A)
		Approach	8.8 (A)
2036 Build	2.3 (A)	Lane Group	9.5 (A)
		Approach	9.5 (A)
2041 No Build	5.4 (A)	Lane Group	8.9 (A)
		Approach	8.9 (A)
2041 Build	2.2 (A)	Lane Group	9.7 (A)
		Approach	9.7 (A)

95th Percentile Queues - HCM 2000

Scenario		Southeastbound
		L
Storage Length Available (ft)		200
95th Percentile Queue Length (ft)	2036 No Build	4
	2036 Build	5
	2041 No Build	4
	2041 Build	5

Measures of Effectiveness
Sat Peak Hour (1:00 PM - 2:00 PM)
1d. Prince William Parkway Northbound On-Ramp

Unsignalized Delay - HCM 2000

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)
			Northwest
			L
2036 No Build	0.6 (A)	Lane Group	9.7 (A)
		Approach	9.7 (A)
2036 Build	4.7 (A)	Lane Group	10.8 (B)
		Approach	10.8 (B)
2041 No Build	0.6 (A)	Lane Group	9.8 (A)
		Approach	9.8 (A)
2041 Build	5.1 (A)	Lane Group	11.3 (B)
		Approach	11.3 (B)

95th Percentile Queues - HCM 2000

Scenario		Northbound
		R
Storage Length Available (ft)		250
95th Percentile Queue Length (ft)	2036 No Build	1
	2036 Build	19
	2041 No Build	2
	2041 Build	25

Measures of Effectiveness

Sat Peak Hour (1:00 PM - 2:00 PM)

10. Wakeman Drive at S Satellite Driveway

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Westbound		Northbound	Southbound	
			L	R	TR	L	T
2036 Build	0.3 (A)	Lane Group	12.2	0.0	0.0	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	12.2		0.0		0.0
			(B)		(A)		(A)
2041 Build	0.3 (A)	Lane Group	12.3	0.0	0.0	0.0	0.0
			(B)	(A)	(A)	(A)	(A)
		Approach	12.3		0.0		0.0
			(B)		(A)		(A)

95th Percentile Queues - HCM 2000

Scenario		Westbound	Northbound	Southbound
		LR	TR	LT
Storage Length Available (ft)		300	365	355
95th Percentile Queue Length (ft)	2036 Build	1	0	0
	2041 Build	2	0	0

Measures of Effectiveness

Sat Peak Hour (1:00 PM - 2:00 PM)

11. Wakeman Drive at N Satellite Driveway

Unsignalized Delay - HCM 6th Edition Two Way Stop Control

Scenario	Overall Delay (LOS)	Lane Group/ Approach	Delay (sec/veh)				
			Westbound		Northbound	Southbound	
			L	R	TR	L	T
2036 Build	0.0 (A)	Lane Group	0.0	0.0	0.0	0.0	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0.0		0.0
			(A)		(A)		(A)
2041 Build	0.0 (A)	Lane Group	0.0	0.0	0.0	7.6	0.0
			(A)	(A)	(A)	(A)	(A)
		Approach	0.0		0.0		0.0
			(A)		(A)		(A)

95th Percentile Queues - HCM 2000

Scenario		Westbound	Northbound	Southbound
		LR	TR	LT
Storage Length Available (ft)		225	355	525
95th Percentile Queue Length (ft)	2036 Build	0	0	0
	2041 Build	0	0	0