

Queues

I-526 Long Point Rd IMR

10: Hobcaw Bluff Dr./Wando Park Blvd. & Long Point Rd.

2030 Alternative 2 PM

























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	25	833	133	580	440	91	3	98	662	43
v/c Ratio	0.08	0.57	0.39	0.31	0.32	0.39	0.02	0.28	0.81	0.19
Control Delay	12.5	24.4	8.9	3.8	0.8	45.8	42.7	1.9	45.0	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	24.4	8.9	3.8	0.8	45.8	42.7	1.9	45.0	18.0
Queue Length 50th (ft)	6	194	9	22	0	56	2	0	202	5
Queue Length 95th (ft)	25	328	22	42	0	105	11	0	270	33
Internal Link Dist (ft)		408		302			505			503
Turn Bay Length (ft)	150		525			100		100	200	
Base Capacity (vph)	329	1456	345	1878	1385	249	152	356	854	350
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.57	0.39	0.31	0.32	0.37	0.02	0.28	0.78	0.12

Intersection Summary

HCM Signalized Intersection Capacity Analysis

10: Hobcaw Bluff Dr./Wando Park Blvd. & Long Point Rd.

I-526 Long Point Rd IMR
2030 Alternative 2 PM

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	710	56	17	106	534	405	84	3	90	609	8
Future Volume (vph)	23	710	56	17	106	534	405	84	3	90	609	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8	7.8			6.8	7.8	6.9	6.4	7.0	6.8	6.9	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00			1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99			1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1271	3319			1800	3195	1561	1787	1900	1599	3467	1541
Flt Permitted	0.42	1.00			0.23	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	561	3319			437	3195	1561	1787	1900	1599	3467	1541
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	772	61	18	115	580	440	91	3	98	662	9
RTOR Reduction (vph)	0	5	0	0	0	0	103	0	0	88	0	29
Lane Group Flow (vph)	25	828	0	0	133	580	337	91	3	10	662	14
Confl. Peds. (#/hr)	1						1					
Heavy Vehicles (%)	42%	8%	2%	2%	0%	13%	2%	1%	0%	1%	1%	0%
Turn Type	D.Pm	NA		custom	D.P+P	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases		2			1	6	7	3	8	1!	7	4
Permitted Phases	6			1!	2		6			8		
Actuated Green, G (s)	53.2	38.1			46.4	53.2	76.7	11.4	1.6	9.9	23.5	14.2
Effective Green, g (s)	53.2	38.1			46.4	53.2	76.7	11.4	1.6	9.9	23.5	14.2
Actuated g/C Ratio	0.53	0.38			0.46	0.53	0.77	0.11	0.02	0.10	0.24	0.14
Clearance Time (s)	7.8	7.8			6.8	7.8	6.9	6.4	7.0	6.8	6.9	7.0
Vehicle Extension (s)	6.0	6.0			2.5	6.0	3.0	3.0	3.0	2.5	3.0	3.0
Lane Grp Cap (vph)	298	1264			315	1699	1197	203	30	158	814	218
v/s Ratio Prot		c0.25			0.03	c0.18	0.07	0.05	0.00	0.01	c0.19	c0.01
v/s Ratio Perm	0.04				0.16		0.15			0.00		
v/c Ratio	0.08	0.66			0.42	0.34	0.28	0.45	0.10	0.06	0.81	0.06
Uniform Delay, d1	11.5	25.5			16.4	13.4	3.5	41.4	48.5	40.8	36.2	37.1
Progression Factor	1.00	1.00			0.53	0.29	1.07	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	2.7			0.6	0.5	0.1	1.6	1.5	0.1	6.2	0.1
Delay (s)	12.0	28.2			9.4	4.4	3.8	42.9	50.0	41.0	42.4	37.3
Level of Service	B	C			A	A	A	D	D	D	D	D
Approach Delay (s)		27.7				4.8			42.0			42.1
Approach LOS		C				A			D			D
Intersection Summary												
HCM 2000 Control Delay			23.0			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			28.5			
Intersection Capacity Utilization			75.8%			ICU Level of Service			D			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

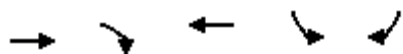
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	31
Future Volume (vph)	31
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	34
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	11%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Queues

I-526 Long Point Rd IMR

11: I-526 EB On-Ramp/I-526 EB off ramp & Long Point Rd.

2030 Alternative 2 PM




Lane Group	EBT	EBR	WBT	SBL	SBR
Lane Group Flow (vph)	892	651	834	1440	318
v/c Ratio	0.55	0.42	0.44	0.83	0.25
Control Delay	17.9	0.7	8.5	34.3	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	0.7	8.5	34.3	0.5
Queue Length 50th (ft)	182	0	96	293	0
Queue Length 95th (ft)	302	0	180	321	0
Internal Link Dist (ft)	176		329		
Turn Bay Length (ft)					400
Base Capacity (vph)	1610	1538	1907	2066	1262
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.42	0.44	0.70	0.25
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

11: I-526 EB On-Ramp/I-526 EB off ramp & Long Point Rd.

I-526 Long Point Rd IMR
2030 Alternative 2 PM

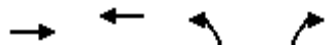
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑					↘↘↘		↗
Traffic Volume (vph)	0	821	599	0	767	0	0	0	0	1325	0	293
Future Volume (vph)	0	821	599	0	767	0	0	0	0	1325	0	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0		6.0					5.0		4.0
Lane Util. Factor		0.95	1.00		0.95					0.94		1.00
Frpb, ped/bikes		1.00	1.00		1.00					1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00					1.00		1.00
Frt		1.00	0.85		1.00					1.00		0.85
Flt Protected		1.00	1.00		1.00					0.95		1.00
Satd. Flow (prot)		2959	1538		3505					5040		1262
Flt Permitted		1.00	1.00		1.00					0.95		1.00
Satd. Flow (perm)		2959	1538		3505					5040		1262
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	892	651	0	834	0	0	0	0	1440	0	318
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	892	651	0	834	0	0	0	0	1440	0	318
Confl. Peds. (#/hr)										1		
Heavy Vehicles (%)	0%	22%	5%	0%	3%	0%	0%	0%	0%	1%	0%	28%
Turn Type		NA	Free		NA					Prot		Free
Protected Phases		2			6					4		
Permitted Phases			Free									Free
Actuated Green, G (s)		54.4	100.0		54.4					34.6		100.0
Effective Green, g (s)		54.4	100.0		54.4					34.6		100.0
Actuated g/C Ratio		0.54	1.00		0.54					0.35		1.00
Clearance Time (s)		6.0			6.0					5.0		
Vehicle Extension (s)		2.5			2.5					2.0		
Lane Grp Cap (vph)		1609	1538		1906					1743		1262
v/s Ratio Prot		c0.30			0.24					c0.29		
v/s Ratio Perm			0.42									0.25
v/c Ratio		0.55	0.42		0.44					0.83		0.25
Uniform Delay, d1		14.9	0.0		13.6					29.9		0.0
Progression Factor		1.05	1.00		0.54					1.00		1.00
Incremental Delay, d2		1.1	0.7		0.7					3.2		0.5
Delay (s)		16.8	0.7		8.1					33.1		0.5
Level of Service		B	A		A					C		A
Approach Delay (s)		10.0			8.1			0.0			27.2	
Approach LOS		A			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			16.9									HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			100.0							11.0		
Intersection Capacity Utilization			91.7%									ICU Level of Service F
Analysis Period (min)			15									
c Critical Lane Group												

Queues

I-526 Long Point Rd IMR

12: I-526 WB off ramp & Long Point Rd.

2030 Alternative 2 PM



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1973	1013	367	710
v/c Ratio	0.67	0.47	0.35	0.81
Control Delay	12.0	8.5	26.9	38.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.0	8.5	26.9	38.7
Queue Length 50th (ft)	190	100	91	230
Queue Length 95th (ft)	284	m101	121	285
Internal Link Dist (ft)	241	48	405	
Turn Bay Length (ft)				
Base Capacity (vph)	2961	2147	1234	1027
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	0.67	0.47	0.30	0.69

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis 12: I-526 WB off ramp & Long Point Rd.





















I-526 Long Point Rd IMR
2030 Alternative 2 PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↔	↔
Traffic Volume (vph)	1815	0	0	932	338	653
Future Volume (vph)	1815	0	0	932	338	653
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6			5.6	5.7	5.7
Lane Util. Factor	0.91			*1.00	0.97	0.88
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	5136			3725	3400	2814
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	5136			3725	3400	2814
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1973	0	0	1013	367	710
RTOR Reduction (vph)	0	0	0	0	0	7
Lane Group Flow (vph)	1973	0	0	1013	367	703
Heavy Vehicles (%)	1%	0%	0%	2%	3%	1%
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases						
Actuated Green, G (s)	57.7			57.7	31.0	31.0
Effective Green, g (s)	57.7			57.7	31.0	31.0
Actuated g/C Ratio	0.58			0.58	0.31	0.31
Clearance Time (s)	5.6			5.6	5.7	5.7
Vehicle Extension (s)	4.0			4.0	3.0	3.0
Lane Grp Cap (vph)	2963			2149	1054	872
v/s Ratio Prot	c0.38			0.27	0.11	c0.25
v/s Ratio Perm						
v/c Ratio	0.67			0.47	0.35	0.81
Uniform Delay, d1	14.5			12.3	26.7	31.7
Progression Factor	0.71			0.62	1.00	1.00
Incremental Delay, d2	1.0			0.3	0.2	5.5
Delay (s)	11.3			7.9	26.9	37.2
Level of Service	B			A	C	D
Approach Delay (s)	11.3			7.9	33.7	
Approach LOS	B			A	C	
Intersection Summary						
HCM 2000 Control Delay		16.4		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.71				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		11.3
Intersection Capacity Utilization		67.3%		ICU Level of Service		C
Analysis Period (min)		15				
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

13: Belle Hall Pkwy. & Long Point Rd.

I-526 Long Point Rd IMR
2030 Alternative 2 PM












												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 							
Traffic Volume (veh/h)	0	2219	249	0	1587	129	0	0	61	0	0	275
Future Volume (Veh/h)	0	2219	249	0	1587	129	0	0	61	0	0	275
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92
Hourly flow rate (vph)	0	2386	268	0	1688	137	0	0	65	0	0	299
Pedestrians												1
Lane Width (ft)												12.0
Walking Speed (ft/s)												3.5
Percent Blockage												0
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		323			836							
pX, platoon unblocked	0.64			0.74			0.77	0.77	0.74	0.77	0.77	0.64
vC, conflicting volume	1689			2386			3364	4209	929	2553	4144	914
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	949			1624			1411	2506	0	360	2422	0
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 %	100			100			100	100	92	100	100	57
cM capacity (veh/h)	467			298			44	22	797	407	25	692
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1	SB 1				
Volume Total	0	954	954	745	1125	700	65	299				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	0	268	0	137	65	299				
cSH	1700	1700	1700	1700	1700	1700	797	692				
Volume to Capacity	0.00	0.56	0.56	0.44	0.66	0.41	0.08	0.43				
Queue Length 95th (ft)	0	0	0	0	0	0	7	55				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.9	14.1				
Lane LOS							A	B				
Approach Delay (s)	0.0				0.0		9.9	14.1				
Approach LOS							A	B				
Intersection Summary												
Average Delay			1.0									
Intersection Capacity Utilization			71.7%		ICU Level of Service					C		
Analysis Period (min)			15									

Queues

15: Belle Point & Long Point Rd.

I-526 Long Point Rd IMR

2030 Alternative 2 PM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	513	1657	309	183	1407	385	66	150	103	75	108
v/c Ratio	1.16	0.92	0.34	0.88	1.08	1.17	0.14	0.22	0.31	0.16	0.13
Control Delay	117.9	31.5	6.5	62.1	82.0	138.4	30.4	9.6	33.7	30.7	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	117.9	31.5	6.5	62.1	82.0	138.4	30.4	9.6	33.7	30.7	9.5
Queue Length 50th (ft)	~338	406	33	60	~532	~293	33	23	54	38	24
Queue Length 95th (ft)	#548	#656	79	#190	#670	#475	68	64	102	75	52
Internal Link Dist (ft)		756			790		405			1179	
Turn Bay Length (ft)			210	175		175		185	150		175
Base Capacity (vph)	442	1794	922	208	1299	330	471	675	336	466	827
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.92	0.34	0.88	1.08	1.17	0.14	0.22	0.31	0.16	0.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
























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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis



















15: Belle Point & Long Point Rd.

I-526 Long Point Rd IMR
2030 Alternative 2 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	472	1524	284	168	1263	31	354	61	138	95	69	99
Future Volume (vph)	472	1524	284	168	1263	31	354	61	138	95	69	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.8	5.8	5.7	5.8		6.2	6.2	5.7	6.2	6.2	5.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3574	1599	1805	3488		1787	1900	1615	1805	1881	1583
Flt Permitted	0.09	1.00	1.00	0.11	1.00		0.71	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	177	3574	1599	204	3488		1332	1900	1615	1357	1881	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	513	1657	309	183	1373	34	385	66	150	103	75	108
RTOR Reduction (vph)	0	0	120	0	2	0	0	0	63	0	0	17
Lane Group Flow (vph)	513	1657	189	183	1405	0	385	66	87	103	75	91
Heavy Vehicles (%)	0%	1%	1%	0%	3%	8%	1%	0%	0%	0%	1%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	63.2	50.2	50.2	44.5	37.2		24.8	24.8	32.1	24.8	24.8	45.1
Effective Green, g (s)	63.2	50.2	50.2	44.5	37.2		24.8	24.8	32.1	24.8	24.8	45.1
Actuated g/C Ratio	0.63	0.50	0.50	0.44	0.37		0.25	0.25	0.32	0.25	0.25	0.45
Clearance Time (s)	5.7	5.8	5.8	5.7	5.8		6.2	6.2	5.7	6.2	6.2	5.7
Vehicle Extension (s)	2.6	2.6	2.6	2.5	2.6		2.5	2.5	2.5	2.5	2.5	2.6
Lane Grp Cap (vph)	442	1794	802	207	1297		330	471	518	336	466	713
v/s Ratio Prot	c0.24	0.46		0.06	0.40			0.03	0.01		0.04	0.03
v/s Ratio Perm	c0.50		0.12	0.33			c0.29		0.04	0.08		0.03
v/c Ratio	1.16	0.92	0.24	0.88	1.08		1.17	0.14	0.17	0.31	0.16	0.13
Uniform Delay, d1	31.4	23.1	14.1	22.2	31.4		37.6	29.3	24.4	30.6	29.5	16.0
Progression Factor	0.95	1.00	1.56	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	90.5	7.7	0.5	32.8	50.8		102.8	0.1	0.1	0.4	0.1	0.1
Delay (s)	120.3	30.7	22.5	54.9	82.2		140.4	29.4	24.5	31.0	29.6	16.1
Level of Service	F	C	C	D	F		F	C	C	C	C	B
Approach Delay (s)		48.2			79.1			99.3			25.0	
Approach LOS		D			E			F			C	
Intersection Summary												
HCM 2000 Control Delay			63.0			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			17.7			
Intersection Capacity Utilization			103.1%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis 21: Hidden Blvd./Shipping Ln. & Long Point Rd.

I-526 Long Point Rd IMR
2030 Alternative 2 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	437	32	74	390	35	35	0	51	109	0	8
Future Volume (Veh/h)	15	437	32	74	390	35	35	0	51	109	0	8
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.93	0.93	0.93	0.84	0.84	0.84
Hourly flow rate (vph)	18	533	39	90	476	43	38	0	55	130	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	TWLTL			TWLTL								
Median storage veh)	2			2								
Upstream signal (ft)				1201								
pX, platoon unblocked												
vC, conflicting volume	519			572			1016	1288	286	1035	1286	260
vC1, stage 1 conf vol							588	588		678	678	
vC2, stage 2 conf vol							428	699		358	608	
vCu, unblocked vol	519			572			1016	1288	286	1035	1286	260
tC, single (s)	5.5			4.1			7.6	6.5	7.0	7.6	6.5	8.3
tC, 2 stage (s)							6.6	5.5		6.6	5.5	
tF (s)	2.9			2.2			3.5	4.0	3.3	3.5	4.0	4.0
p0 queue free %	97			91			89	100	92	58	100	98
cM capacity (veh/h)	691			1004			360	325	708	313	308	567
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	18	355	217	90	317	202	93	140				
Volume Left	18	0	0	90	0	0	38	130				
Volume Right	0	0	39	0	0	43	55	10				
cSH	691	1700	1700	1004	1700	1700	508	323				
Volume to Capacity	0.03	0.21	0.13	0.09	0.19	0.12	0.18	0.43				
Queue Length 95th (ft)	2	0	0	7	0	0	17	52				
Control Delay (s)	10.3	0.0	0.0	8.9	0.0	0.0	13.7	24.4				
Lane LOS	B			A			B	C				
Approach Delay (s)	0.3			1.3			13.7	24.4				
Approach LOS							B	C				
Intersection Summary												
Average Delay				4.0								
Intersection Capacity Utilization				40.3%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

22: Wando Ln. & Long Point Rd.

I-526 Long Point Rd IMR
2030 Alternative 2 PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Traffic Volume (veh/h)	344	1	17	209	0	33
Future Volume (Veh/h)	344	1	17	209	0	33
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)	374	1	18	227	0	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			TWLT		
Median storage (veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			375		524	188
vC1, stage 1 conf vol					374	
vC2, stage 2 conf vol					150	
vCu, unblocked vol			375		524	188
tC, single (s)			4.2		6.8	7.0
tC, 2 stage (s)					5.8	
tF (s)			2.3		3.5	3.3
p0 queue free %			98		100	96
cM capacity (veh/h)			1152		622	819
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	249	126	18	114	114	36
Volume Left	0	0	18	0	0	0
Volume Right	0	1	0	0	0	36
cSH	1700	1700	1152	1700	1700	819
Volume to Capacity	0.15	0.07	0.02	0.07	0.07	0.04
Queue Length 95th (ft)	0	0	1	0	0	3
Control Delay (s)	0.0	0.0	8.2	0.0	0.0	9.6
Lane LOS			A			A
Approach Delay (s)	0.0		0.6			9.6
Approach LOS						A
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			19.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

23: Lone Tree Dr & Long Point Rd.

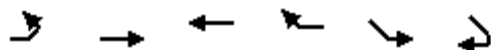
I-526 Long Point Rd IMR
2030 Alternative 2 PM

	→	↘	↙	←	↖	↗	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑↑↘			↑↑↑		↗	
Traffic Volume (veh/h)	1398	28	0	1060	0	22	
Future Volume (Veh/h)	1398	28	0	1060	0	22	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	1553	31	0	1178	0	24	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None		None				
Median storage veh)							
Upstream signal (ft)	382		256				
pX, platoon unblocked			0.86		0.92	0.86	
vC, conflicting volume			1584		1961	533	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			1127		892	0	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			100		100	97	
cM capacity (veh/h)			532		260	937	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	621	621	342	393	393	393	24
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	31	0	0	0	24
cSH	1700	1700	1700	1700	1700	1700	937
Volume to Capacity	0.37	0.37	0.20	0.23	0.23	0.23	0.03
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	8.9
Lane LOS							
Approach Delay (s)	0.0			0.0			8.9
Approach LOS							
A							
Intersection Summary							
Average Delay			0.1				
Intersection Capacity Utilization			37.6%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

41: Long Point Rd. & Long Point/I-526 EB onramp







I-526 Long Point Rd IMR
2030 Alternative 2 PM



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑↑	↑↑	↑		
Traffic Volume (veh/h)	0	2146	767	503	0	0
Future Volume (Veh/h)	0	2146	767	503	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	2555	852	559	0	0
Pedestrians					1	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		409	1276			
pX, platoon unblocked	0.97				0.97	0.97
vC, conflicting volume	1412				1705	427
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1364				1666	349
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	485				85	628
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3
Volume Total	852	852	852	426	426	559
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	559
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.50	0.50	0.50	0.25	0.25	0.33
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			91.7%		ICU Level of Service	F
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
49: I-526 WB On-Ramp & Long Point Rd.

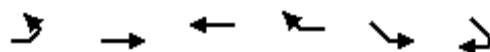
I-526 Long Point Rd IMR
2030 Alternative 2 PM

						
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑↑	↑		↑↑		
Traffic Volume (veh/h)	1815	331	0	1270	0	0
Future Volume (Veh/h)	1815	331	0	1270	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.94	0.94	0.90	0.90
Hourly flow rate (vph)	1891	345	0	1351	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				321		
pX, platoon unblocked					0.84	
vC, conflicting volume			2236		2566	630
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2236		2483	630
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			235		20	424
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2
Volume Total	630	630	630	345	676	676
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	345	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.37	0.37	0.37	0.20	0.40	0.40
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0				0.0	
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			67.3%		ICU Level of Service	
Analysis Period (min)			15		C	

HCM Unsignalized Intersection Capacity Analysis

54: Long Point Rd. & I-526 WB On-Ramp

I-526 Long Point Rd IMR
2030 Alternative 2 PM





















Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑↑	↑↑	↑		
Traffic Volume (veh/h)	0	2468	932	930	0	0
Future Volume (Veh/h)	0	2468	932	930	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.94	0.94	0.90	0.90
Hourly flow rate (vph)	0	2571	991	989	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		128	1031			
pX, platoon unblocked	0.71				0.85	0.71
vC, conflicting volume	1980				1848	496
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1573				0	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	297				866	775
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3
Volume Total	857	857	857	661	660	659
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	330	659
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.50	0.50	0.50	0.39	0.39	0.39
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			51.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

87: WWT Access Rd & N. Gate/ Shipping Lane













I-526 Long Point Rd IMR
2030 Alternative 2 PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	0	0	20	10	230	10	0	105	13	
Future Volume (Veh/h)	0	0	0	0	0	20	10	230	10	0	105	13	
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)	0	0	0	0	0	22	11	250	11	0	114	14	
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	283	397	57	329	400	125	128				261		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	283	397	57	329	400	125	128				261		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	8.4	6.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	4.0	3.2				2.2		
p0 queue free %	100	100	100	100	100	97	99				100		
cM capacity (veh/h)	622	533	997	595	531	712	958				1300		
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4				
Volume Total	22	11	125	125	11	57	57	7	7				
Volume Left	0	11	0	0	0	0	0	0	0				
Volume Right	22	0	0	0	11	0	0	7	7				
cSH	712	958	1700	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.03	0.01	0.07	0.07	0.01	0.03	0.03	0.00	0.00				
Queue Length 95th (ft)	2	1	0	0	0	0	0	0	0				
Control Delay (s)	10.2	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	B	A											
Approach Delay (s)	10.2	0.4	0.0										
Approach LOS	B												
Intersection Summary													
Average Delay	0.8												
Intersection Capacity Utilization	16.4%			ICU Level of Service					A				
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis

98: WWT Access Rd & Long Point Rd.

I-526 Long Point Rd IMR
2030 Alternative 2 PM

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	126	83	167	271	73	31		
Future Volume (Veh/h)	126	83	167	271	73	31		
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)	137	90	182	295	79	34		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type	None				TWLTL			
Median storage veh					2			
Upstream signal (ft)								
pX, platoon unblocked								
vC, conflicting volume	357	91				182		
vC1, stage 1 conf vol	182							
vC2, stage 2 conf vol	175							
vCu, unblocked vol	357	91				182		
tC, single (s)	8.1	7.6				4.6		
tC, 2 stage (s)	7.1							
tF (s)	4.2	3.6				2.4		
p0 queue free %	76	89				94		
cM capacity (veh/h)	566	852				1244		
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	137	90	91	91	295	79	17	17
Volume Left	137	0	0	0	0	79	0	0
Volume Right	0	90	0	0	295	0	0	0
cSH	566	852	1700	1700	1700	1244	1700	1700
Volume to Capacity	0.24	0.11	0.05	0.05	0.17	0.06	0.01	0.01
Queue Length 95th (ft)	24	9	0	0	0	5	0	0
Control Delay (s)	13.4	9.7	0.0	0.0	0.0	8.1	0.0	0.0
Lane LOS	B	A				A		
Approach Delay (s)	11.9	0.0		5.7				
Approach LOS	B							
Intersection Summary								
Average Delay			4.1					
Intersection Capacity Utilization			27.5%	ICU Level of Service			A	
Analysis Period (min)			15					