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2000 HCM VERSUS 2010 HCM ANALYSIS EXAMPLE COMPARISON
(BRYANT STREET & OAK GLEN ROAD)

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






















HCM 2010 Signalized Intersection Summary
 1: Bryant St & Oak Glen Rd

2040 PM Total
 06/06/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	237	194	194	94	122	102	151	305	109	71	392	172
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	249	204	204	99	128	107	159	321	115	75	413	181
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	384	326	126	317	270	189	1162	520	94	661	287
Arrive On Green	0.11	0.21	0.21	0.07	0.17	0.17	0.11	0.33	0.33	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	2406	1043
Grp Volume(v), veh/h	249	204	204	99	128	107	159	321	115	75	303	291
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1679
Q Serve(g_s), s	5.0	4.6	5.5	2.6	2.9	2.8	4.1	3.1	2.5	2.0	7.0	7.1
Cycle Q Clear(g_c), s	5.0	4.6	5.5	2.6	2.9	2.8	4.1	3.1	2.5	2.0	7.0	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	189	384	326	126	317	270	189	1162	520	94	487	462
V/C Ratio(X)	1.32	0.53	0.63	0.79	0.40	0.40	0.84	0.28	0.22	0.79	0.62	0.63
Avail Cap(c_a), veh/h	189	676	574	189	676	574	189	1284	574	189	642	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	16.6	17.0	21.4	17.3	17.3	20.5	11.6	11.4	21.9	14.9	14.9
Incr Delay (d2), s/veh	174.3	1.1	2.0	11.9	0.8	0.9	27.2	0.1	0.2	13.9	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	2.4	2.6	1.7	1.5	1.3	3.4	1.5	1.1	1.3	3.5	3.4
LnGrp Delay(d),s/veh	195.3	17.7	18.9	33.4	18.2	18.2	47.7	11.7	11.6	35.8	16.2	16.3
LnGrp LOS	F	B	B	C	B	B	D	B	B	D	B	B
Approach Vol, veh/h		657			334			595			669	
Approach Delay, s/veh		85.4			22.7			21.3			18.4	
Approach LOS		F			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	19.4	7.3	13.7	9.0	16.9	9.0	12.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.0	17.0	5.0	17.0	5.0	17.0	5.0	17.0				
Max Q Clear Time (g_c+I1), s	4.0	5.1	4.6	7.5	6.1	9.1	7.0	4.9				
Green Ext Time (p_c), s	0.0	4.9	0.0	2.2	0.0	3.7	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay			39.3									
HCM 2010 LOS			D									

HCM Signalized Intersection Capacity Analysis
1: Bryant St & Oak Glen Rd

2040 PM Total
06/06/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	194	194	94	122	102	151	305	109	71	392	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	0.95
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3377	3377
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3377	3377
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	249	204	204	99	128	107	159	321	115	75	413	181
RTOR Reduction (vph)	0	0	160	0	0	88	0	0	75	0	81	0
Lane Group Flow (vph)	249	204	44	99	128	19	159	321	40	75	513	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	NA
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	5.7	11.1	11.1	3.7	9.1	9.1	5.3	17.7	17.7	2.6	15.0	15.0
Effective Green, g (s)	5.7	11.1	11.1	3.7	9.1	9.1	5.3	17.7	17.7	2.6	15.0	15.0
Actuated g/C Ratio	0.11	0.22	0.22	0.07	0.18	0.18	0.10	0.35	0.35	0.05	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	197	404	343	128	331	281	183	1225	548	90	991	991
v/s Ratio Prot	c0.14	c0.11		0.06	0.07		c0.09	c0.09		0.04	c0.15	c0.15
v/s Ratio Perm			0.03			0.01			0.03			
v/c Ratio	1.26	0.50	0.13	0.77	0.39	0.07	0.87	0.26	0.07	0.83	0.52	0.52
Uniform Delay, d1	22.7	17.6	16.1	23.3	18.5	17.5	22.6	12.0	11.2	24.0	15.0	15.0
Progression 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
Incremental Delay, d2	152.8	1.0	0.2	24.7	0.8	0.1	32.6	0.1	0.1	45.4	0.5	0.5
Delay (s)	175.5	18.6	16.3	48.0	19.3	17.6	55.1	12.1	11.3	69.4	15.5	15.5
Level of Service	F	B	B	D	B	B	E	B	B	E	B	B
Approach Delay (s)		77.3			27.2			23.4			21.5	
Approach LOS		E			C			C			C	

Intersection Summary

HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			