













HCM Signalized Intersection Capacity Analysis

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08/04/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	31	22	280	24	20	512
Future Volume (vph)	31	22	280	24	20	512
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		6.0		4.0	4.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.94		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1708		3366		1752	3505
Flt Permitted	0.97		1.00		0.54	1.00
Satd. Flow (perm)	1708		3366		1005	3505
Peak-hour factor, PHF	0.63	0.63	0.88	0.88	0.93	0.93
Adj. Flow (vph)	49	35	318	27	22	551
RTOR Reduction (vph)	31	0	5	0	0	0
Lane Group Flow (vph)	53	0	340	0	22	551
Heavy Vehicles (%)	2%	2%	6%	6%	3%	3%
Turn Type	Prot		NA		D.P+P	NA
Protected Phases	3		2		1	1 2
Permitted Phases					2	
Actuated Green, G (s)	6.9		40.5		50.8	54.8
Effective Green, g (s)	6.9		40.5		50.8	54.8
Actuated g/C Ratio	0.09		0.56		0.70	0.75
Clearance Time (s)	5.0		6.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	162		1875		808	2642
v/s Ratio Prot	c0.03		0.10		0.00	c0.16
v/s Ratio Perm					0.02	
v/c Ratio	0.33		0.18		0.03	0.21
Uniform Delay, d1	30.7		7.9		3.3	2.6
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.2		0.0		0.0	0.0
Delay (s)	31.9		8.0		3.4	2.7
Level of Service	C		A		A	A
Approach Delay (s)	31.9		8.0			2.7
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			7.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.24			
Actuated Cycle Length (s)			72.7		Sum of lost time (s)	15.0
Intersection Capacity Utilization			49.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑↓		↔	↑↑
Traffic Volume (vph)	31	21	464	74	33	423
Future Volume (vph)	31	21	464	74	33	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		6.0		4.0	4.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.95		0.98		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1710		3501		1770	3539
Flt Permitted	0.97		1.00		0.40	1.00
Satd. Flow (perm)	1710		3501		745	3539
Peak-hour factor, PHF	0.77	0.77	0.85	0.85	0.83	0.83
Adj. Flow (vph)	40	27	546	87	40	510
RTOR Reduction (vph)	25	0	10	0	0	0
Lane Group Flow (vph)	42	0	623	0	40	510
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Turn Type	Prot		NA		D.P+P	NA
Protected Phases	3		2		1	1 2
Permitted Phases					2	
Actuated Green, G (s)	6.6		40.4		50.2	54.2
Effective Green, g (s)	6.6		40.4		50.2	54.2
Actuated g/C Ratio	0.09		0.56		0.70	0.75
Clearance Time (s)	5.0		6.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	157		1969		660	2671
v/s Ratio Prot	c0.02		c0.18		0.01	c0.14
v/s Ratio Perm					0.03	
v/c Ratio	0.27		0.32		0.06	0.19
Uniform Delay, d1	30.4		8.4		3.3	2.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.9		0.1		0.0	0.0
Delay (s)	31.3		8.4		3.4	2.6
Level of Service	C		A		A	A
Approach Delay (s)	31.3		8.4			2.6
Approach LOS	C		A			A

Intersection Summary

HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group