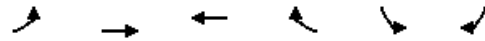


Appendix C Future Alternatives  
Operational Analysis  
Worksheets, US 197/US 30



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↗	↖	↗	↘	↘
Volume (vph)	275	197	120	211	226	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	1881	1845	1524	1752	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	1881	1845	1524	1752	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	306	219	133	234	251	148
RTOR Reduction (vph)	0	0	0	183	0	114
Lane Group Flow (vph)	306	219	133	51	251	34
Heavy Vehicles (%)	1%	1%	3%	6%	3%	1%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	12.1	27.9	10.8	10.8	11.5	11.5
Effective Green, g (s)	12.1	27.9	10.8	10.8	11.5	11.5
Actuated g/C Ratio	0.24	0.56	0.22	0.22	0.23	0.23
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	437	1062	403	333	407	372
v/s Ratio Prot	c0.17	0.12	c0.07		c0.14	
v/s Ratio Perm				0.03		0.02
v/c Ratio	0.70	0.21	0.33	0.15	0.62	0.09
Uniform Delay, d1	17.0	5.3	16.3	15.6	17.0	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.1	0.5	0.2	2.8	0.1
Delay (s)	22.0	5.4	16.7	15.8	19.7	15.0
Level of Service	C	A	B	B	B	B
Approach Delay (s)		15.1	16.2		18.0	
Approach LOS		B	B		B	

**Intersection Summary**

HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Parameter	Approach															
	EB (West Leg): US 30				WB (East Leg): US 197				NB (South Leg):				SB (North Leg): US 197			
<b>INPUTS</b>																
<b>Lane Configuration</b>																
Entry Lane(s) Configuration (Note: This assumes 4 legs.)	LTR Case: <input type="text"/>				LTR Case: <input type="text"/>				LTR Case: <input type="text"/>				LTR Case: <input type="text"/>			
RT bypass configuration (Note: This is in addition to the entry lane(s))	None Case: <input type="text"/>				None Case: <input type="text"/>				None Case: <input type="text"/>				None Case: <input type="text"/>			
Number of conflicting circ lanes	1				1				1				1			
Number of conflicting exit lanes for bypass lane (if used)																
<b>Vehicular Volumes</b>																
Flow (veh/h)	U (v1U)	L (v1)	T (v2)	R (v3)	U (v4U)	L (v4)	T (v5)	R (v6)	U (v7U)	L (v7)	T (v8)	R (v9)	U (v10U)	L (v10)	T (v11)	R (v12)
% HV	1	1	0	0	0	0	3	6	0	0	0	0	3	0	0	1
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
<b>Pedestrian Volumes (crossing leg)</b>																
n_p	0				0				0				0			
<b>Constants</b>																
Time period, T (h)	0.25															
PCE for HV	2															
<b>SUMMARY</b>																
Entry lane volume (veh/h)	N/A	525	N/A		N/A	374	N/A		N/A	0	N/A		N/A	396	N/A	
Entry lane capacity (veh/h)	N/A	1050	N/A		N/A	978	N/A		N/A	693	N/A		N/A	1217	N/A	
x (v/c ratio)	N/A	0.50	N/A		N/A	0.38	N/A		N/A	0.00	N/A		N/A	0.33	N/A	
Lane control delay (s/veh)	N/A	9.3	N/A		N/A	7.9	N/A		N/A	5.2	N/A		N/A	6.0	N/A	
Lane LOS	N/A	A	N/A		N/A	A	N/A		N/A	A	N/A		N/A	A	N/A	
Approach control delay (s/veh)	9.3				7.9				0.0				6.0			
Approach LOS	A				A				N/A				A			
Intersection control delay (s/veh)	7.9															
Intersection LOS	A															
95th percentile queue (veh)	N/A	2.9	N/A		N/A	1.8	N/A		N/A	0.0	N/A		N/A	1.4	N/A	