WEBSTER

WEbster Based Signal Timing Evaluation Routine

For Capacity and Level of Service Analysis Using HCM 2000 Control Delay

Existing Condition w/Existing Geometrics

Barstow and Main **HFI,inc.** **PM Peak Hour**

Input

	Eastbound			Westbound			Northbound			Southbound		
Movement Times	L	*T*	R	*L*	T	R	*L*	T	R	L	T	R
Movement 1: 10 secs				X								
Movement 2: 20 secs		X	X		X							
Movement 3: 11 secs							X		X			
Movement 4: 0 secs												
Movement 5: 0 secs												
Movement 6: 0 secs												
# of Lanes (#, S, P)		2	S	1	2		1		1			
Unadjusted Volume		490	220	180	500		220		170			
Peak Hour Factor (PHF)		1.00	1.00	1.00	1.00		1.00		1.00			
Growth Factor (%)												
Project Trip Volume (vph)												
Sat. Flow Override (vph)			Shrd									
Min. Time or Ped. Time		20	20	10	20		10		20			
Permissive Veh/Cycle												
Progression Adj. Factor (PAF)		1.00	-	1.00	1.00		1.00		1.00			

Parameter Values (using default set 'SANBAG (Existing)')

	Other	Default
Duration of Peak Period (min)		15
Lost Time (sec)		2
Min. Time (Left Turns, sec)		10
Min/Ped Time (Thru Lanes, sec)		20
Sat Flow (1 Left lane, vphg)	1700	1800
Sat Flow (2 Left lanes, vphg)	3200	3500
Sat Flow (1 Thru lane, vphg)	1800	1900
Sat Flow (1 Right lane, vphg)		1800
Vehicle Length (feet)		20

Output

	***		***		***					
Pk. Hr. Vol. (vph)	490	220	180	500	220		170			
Saturation Flow (vph)	3600	Shrd	1700	3600	1700		1800			
X or V/C	0.45	-	0.54	0.32	0.59		0.43			
Effective green (sec)	18	-	8	18	9		9			
Split Time (sec)	20	-	10	20	11		11			
Min. Time or Ped. Time (sec)	20	-	10	20	10		20			
Delay - 15 min pk (sec/veh)	9	-	21	8	21		17			
Level of Service (LOS)	A	-	C+	A	C+		B			
Average 'Q' (veh/ln)	2	-	2	2	2		2			
Design 'Q'- ft/ln	60	-	60	60	60		60			
Do Vehicles Clear?	YES	-	YES	YES	YES		YES			

Summary

Whole Intersection

Weighted Avg Delay (sec) = 12
Level of Service - LOS = B

Critical Movements

Weighted Avg Delay (sec) = 13
Level of Service - LOS = B
Intersection Capacity Utilization - ICU = 0.51

Required Cycle Length is 41 sec

Min./Ped. Times May Not Be Satisfied

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: BARSTOW
EAST-WEST STREET: MAIN
JURISDICTION: BARSTOW

DATE: 06-05-08

PEAK HOUR: 04:00PM

NORTH LEG

TOTAL: 0

Autos

	Rt	Thru	Lt
Total			
1st			
2nd			
3rd			
4th			

Trucks

484 → ← 488
216 ↓ ↓ 172

6 → ← 12
↓ 6

220 168

EAST LEG TOTAL: 606

	1st	2nd	3rd	4th	Total
Rt					
Thru	111	106	125	124	466
Lt	39	34	23	44	140
	421	400	390	441	

	Total	1st	2nd	3rd	4th
Lt					
Thru	506	130	132	122	122
Rt	205	65	43	43	54

WEST LEG TOTAL: 711

TOTAL

	Lt	Thru	Rt
1st	40		36
2nd	50		35
3rd	43		34
4th	55		42
Total	188		147

SOUTH LEG

← 500
↓ 180
490 →
220 ↓

220 170

TOTAL: 335

PEAK HOUR FACTORS

NORTH LEG =
SOUTH LEG = 0.86
EAST LEG = 0.90
WEST LEG = 0.91

ALL LEGS = 0.94

HOUR TOTAL: 1,652

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : BARSTOW

EAST-WEST STREET : MAIN

BEGINNING TIME : 04:00PM

BARSTOW

06-05-08

AUTOS RT	AUTOS THRU	AUTOS LT	LARGE 2 AXLE RT	LARGE 2 AXLE THRU	LARGE 2 AXLE LT	3 AXLE RT	3 AXLE THRU	3 AXLE LT	4(+) AXLE RT	4(+) AXLE THRU	4(+) AXLE LT	TOTALS
NORTH LEG												
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH LEG												
35	0	38	1	0	2	0	0	0	0	0	0	76
35	0	48	0	0	2	0	0	0	0	0	0	85
34	0	43	0	0	0	0	0	0	0	0	0	77
42	0	55	0	0	0	0	0	0	0	0	0	97
39	0	44	2	0	2	0	0	0	0	0	0	87
28	0	37	2	0	2	0	0	0	0	0	0	69
26	0	42	0	0	0	0	0	0	0	0	0	68
28	0	44	0	0	0	0	0	0	0	0	0	72
267	0	351	5	0	8	0	0	0	0	0	0	631
EAST LEG												
0	107	38	0	3	1	0	1	0	0	0	0	150
0	104	34	0	2	0	0	0	0	0	0	0	140
0	123	23	0	2	0	0	0	0	0	0	0	148
0	122	43	0	2	1	0	0	0	0	0	0	168
0	118	33	0	0	0	0	0	0	0	0	0	151
0	89	31	0	3	0	0	0	0	0	0	0	123
0	108	24	0	1	0	0	0	0	0	0	0	133
0	89	30	0	0	0	0	0	0	0	0	0	119
0	860	256	0	13	2	0	1	0	0	0	0	1132
WEST LEG												
65	128	0	0	1	0	0	0	0	0	1	0	195
43	130	0	0	2	0	0	0	0	0	0	0	175
42	120	0	1	2	0	0	0	0	0	0	0	165
54	121	0	0	1	0	0	0	0	0	0	0	176
42	113	0	1	0	0	0	0	0	0	0	0	156
38	98	0	2	1	0	0	0	0	0	0	0	139
44	92	0	1	0	0	0	0	0	0	1	0	138
34	97	0	0	0	0	0	0	0	0	0	0	131
362	899	0	5	7	0	0	0	0	0	2	0	1275

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: BARSTOW

EAST-WEST STREET: MAIN

TIME: 04:00PM-05:00PM DATE: 06-05-08

NORTH LEG

			Total
			1st
			2nd
			3rd
			4th
Rt	Thru	Lt	

Rt					
Thru	111	106	125	124	466
Lt	39	34	23	44	140
	1st	2nd	3rd	4th	Total

Total	1st	2nd	3rd	4th	
					Lt
506	130	132	122	122	Thru
205	65	43	43	54	Rt

	Lt	Thru	Rt
1st	40		36
2nd	50		35
3rd	43		34
4th	55		42
Total	188		147

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: BARSTOW

EAST-WEST STREET: MAIN

TIME: 05:00PM-06:00PM DATE: 06-05-08

NORTH LEG

	Rt	Thru	Lt
Total			
1st			
2nd			
3rd			
4th			

	1st	2nd	3rd	4th	Total
Rt					
Thru	118	92	109	89	408
Lt	33	31	24	30	118

	Total	1st	2nd	3rd	4th
Lt					
Thru	402	113	99	93	97
Rt	162	43	40	45	34

	Lt	Thru	Rt
1st	46		41
2nd	39		30
3rd	42		26
4th	44		28
Total	171		125

Prepared by NEWPORT TRAFFIC STUDIES