WEBSTER

WEbster Based Signal Timing Evaluation Routine

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

Existing Condition w/Existing Geometrics

First Ave and Main St. **Barstow** **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			X								
Movement 2: 1 secs	X	X	X									
Movement 3: 20 secs		X	X		X	X						
Movement 4: 20 secs							X	X	X	X	X	X
Movement 5: 0 secs												
Movement 6: 0 secs												
# of Lanes (#, S, P)	1	2	S	1	2	S	S	1	S	S	1	1
Unadjusted Volume	175	475	10	10	440	195	10	10	10	175	10	195
Peak Hour Factor (PHF)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor (%)												
Project Trip Volume (vph)												
Sat. Flow Override (vph)			Shrd			Shrd	Shrd		Shrd	Shrd		
Min. Time or Ped. Time	10	20	20	10	20	20	10	20	20	10	20	20
Permissive Veh/Cycle												
Progression Adj. Factor (PAF)	1.00	1.00	-	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)	175	475	10	10	440	195	10	10	10	175	10	195
Saturation Flow (vph)	1700	3600	Shrd	1700	3600	Shrd	Shrd	1200	Shrd	Shrd	1400	1800
X or V/C	0.58	0.36	-	0.04	0.50	-	-	0.07	-	-	0.37	0.31
Effective green (sec)	9	19	-	8	18	-	-	18	-	-	18	18
Split Time (sec)	11	21	-	10	20	-	-	20	-	-	20	20
Min. Time or Ped. Time (sec)	10	20	-	10	20	-	-	20	-	-	20	20
Delay - 15 min pk (sec/veh)	27	12	-	18	14	-	-	11	-	-	14	13
Level of Service (LOS)	C	B	-	B	B	-	-	B	-	-	B	B
Average 'Q' (veh/ln)	2	2	-	1	3	-	-	1	-	-	2	2
Design 'Q'- ft/ln	60	60	-	40	100	-	-	40	-	-	60	60
Do Vehicles Clear?	YES	YES	-	YES	YES	-	-	YES	-	-	YES	YES

Summary

Whole Intersection

Weighted Avg Delay (sec) = 15
Level of Service - LOS = B

Critical Movements

Weighted Avg Delay (sec) = 17
Level of Service - LOS = B
Intersection Capacity Utilization - ICU = 0.47

Required Cycle Length is 51 sec

Min./Ped. Times Satisfied

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 1ST NORTH
EAST-WEST STREET: MAIN
JURISDICTION: BARSTOW

DATE: 06-05-08

PEAK HOUR: 04:00PM

NORTH LEG

TOTAL: 405

	Rt	Thru	Lt		
Total	182		223		
1st	43	0	66	404	
2nd	48	0	43	411	
3rd	54	0	44	368	
4th	37	0	70	409	

Autos: 192, 176, 468, 168, 192, 420, 8

Trucks: 6, 6, 18

EAST LEG TOTAL: 597

	1st	2nd	3rd	4th	Total
Rt	28	48	44	41	161
Thru	113	108	107	106	434
Lt	2	0	0	0	2

	Total	1st	2nd	3rd	4th
Lt	131	32	44	20	35
Thru	448	114	118	97	119
Rt		0	0	0	0

WEST LEG TOTAL: 579

TOTAL: 195, 5, 175, 175, 475, 5, 195, 440, 5, 5, 5, 10

	Lt	Thru	Rt
1st	0	0	6
2nd	0	0	2
3rd	1	1	0
4th	0	0	1
Total	1	1	9

SOUTH LEG

TOTAL: 11

PEAK HOUR FACTORS

NORTH LEG = 0.93
SOUTH LEG = 0.46
EAST LEG = 0.96
WEST LEG = 0.89

ALL LEGS = 0.97

HOUR TOTAL: 1,592

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 1ST NORTH BARSTOW

EAST-WEST STREET : MAIN 06-05-08

BEGINNING TIME : 04:00PM

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												
42	0	66	1	0	0	0	0	0	0	0	0	109
48	0	42	0	0	1	0	0	0	0	0	0	91
54	0	43	0	0	1	0	0	0	0	0	0	98
37	0	70	0	0	0	0	0	0	0	0	0	107
50	0	39	2	0	0	0	0	0	0	0	0	91
22	1	30	1	0	2	0	0	0	1	0	1	58
31	0	52	0	0	3	0	0	0	1	0	1	88
25	0	42	0	0	1	0	0	0	0	0	0	68
309	1	384	4	0	8	0	0	0	2	0	2	710
SOUTH LEG												
6	0	0	0	0	0	0	0	0	0	0	0	6
2	0	0	0	0	0	0	0	0	0	0	0	2
0	1	1	0	0	0	0	0	0	0	0	0	2
1	0	0	0	0	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	0	0	0	0	1
0	1	0	0	0	0	0	0	0	0	0	0	1
1	1	2	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0
11	3	3	0	0	0	0	0	0	0	0	0	17
EAST LEG												
27	110	2	1	3	0	0	0	0	0	0	0	143
48	105	0	0	3	0	0	0	0	0	0	0	156
43	107	0	1	0	0	0	0	0	0	0	0	151
41	105	0	0	1	0	0	0	0	0	0	0	147
36	125	0	2	0	0	0	0	0	1	0	0	164
41	94	0	0	1	0	0	0	0	0	0	0	136
34	98	1	0	1	0	0	0	0	0	0	0	134
33	97	2	0	0	0	0	0	0	0	0	0	132
303	841	5	4	9	0	0	0	0	1	0	0	1163
WEST LEG												
0	111	32	0	2	0	0	0	0	0	1	0	146
0	117	44	0	1	0	0	0	0	0	0	0	162
0	96	20	0	1	0	0	0	0	0	0	0	117
0	118	34	0	1	1	0	0	0	0	0	0	154
1	105	38	0	0	0	0	0	0	0	0	0	144
0	90	36	0	0	0	0	0	0	0	0	0	126
1	76	25	0	0	0	0	0	0	0	0	0	102
0	86	32	0	0	0	0	0	0	0	0	0	118
2	799	261	0	5	1	0	0	0	0	1	0	1069

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 1ST NORTH

EAST-WEST STREET: MAIN

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

NORTH LEG

Rt	Thru	Lt	
182	0	223	Total
43	0	66	1st
48	0	43	2nd
54	0	44	3rd
37	0	70	4th

	1st	2nd	3rd	4th	Total
Rt	28	48	44	41	161
Thru	113	108	107	106	434
Lt	2	0	0	0	2

Total	1st	2nd	3rd	4th	
131	32	44	20	35	Lt
448	114	118	97	119	Thru
0	0	0	0	0	Rt

	Lt	Thru	Rt
1st	0	0	6
2nd	0	0	2
3rd	1	1	0
4th	0	0	1
Total	1	1	9

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 1ST NORTH

EAST-WEST STREET: MAIN

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

NORTH LEG

Rt	Thru	Lt	
133	1	171	Total
52	0	39	1st
24	1	33	2nd
32	0	56	3rd
25	0	43	4th

	1st	2nd	3rd	4th	Total
Rt	39	41	34	33	147
Thru	125	95	99	97	416
Lt	0	0	1	2	3

Total	1st	2nd	3rd	4th	
131	38	36	25	32	Lt
357	105	90	76	86	Thru
2	1	0	1	0	Rt

	Lt	Thru	Rt
1st	0	0	1
2nd	0	1	0
3rd	2	1	1
4th	0	0	0
Total	2	2	2

Prepared by NEWPORT TRAFFIC STUDIES