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 Virginia **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: 10 secs							X			X		
Movement 5: 1 secs										X	X	X
Movement 6: 25 secs								X			X	X
# of Lanes (#, S, P)	1	1	S	1	1	S	1	1		1	2	S
Unadjusted Volume	20	20	35	135	15	70	40	395		140	650	35
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
Growth Factor (%)												
Project Trip Volume (vph)												
Sat. Flow Override (vph)			Shrd			Shrd						Shrd
Min. Time or Ped. Time	10	20	20	10	20	20	10	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	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)	20	20	35	135	15	70	40	395		140	650	35
Saturation Flow (vph)	1700	1800	Shrd	1700	1800	Shrd	1700	1800		1700	3600	Shrd
X or V/C	0.10	0.11	-	0.59	0.17	-	0.20	0.64		0.61	0.53	-
Effective green (sec)	8	18	-	9	19	-	8	23		9	24	-
Split Time (sec)	10	20	-	11	21	-	10	25		11	26	-
Min. Time or Ped. Time (sec)	10	20	-	10	20	-	10	20		10	20	-
Delay - 15 min pk (sec/veh)	27	19	-	38	19	-	29	24		39	19	-
Level of Service (LOS)	C	B	-	D+	B	-	C	C+		D+	B	-
Average 'Q' (veh/ln)	1	1	-	2	1	-	1	5		2	4	-
Design 'Q'- ft/ln	40	40	-	60	40	-	40	160		60	120	-
Do Vehicles Clear?	YES	YES	-	YES	YES	-	YES	YES		YES	YES	-

Summary

Whole Intersection

Weighted Avg Delay (sec) = 24
Level of Service - LOS = C+

Critical Movements

Weighted Avg Delay (sec) = 29
Level of Service - LOS = C
Intersection Capacity Utilization - ICU = 0.47

Required Cycle Length is 67 sec

Min./Ped. Times Satisfied

INTERSECTION TURN COUNT

PEAK HOUR

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

DATE: 06-05-08

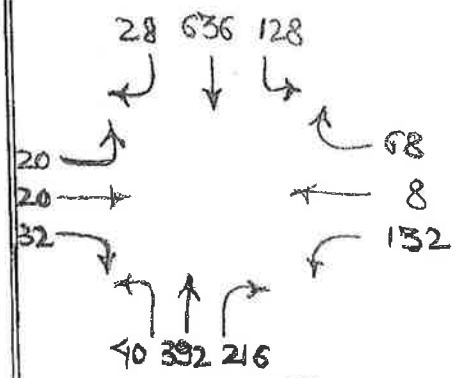
PEAK HOUR: 04:30PM

NORTH LEG

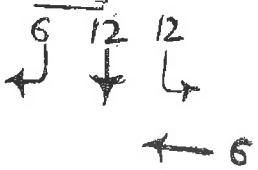
TOTAL: 638

	Rt	Thru	Lt	Total
	18	549	71	
1st	1	119	9	378
2nd	8	160	33	434
3rd	5	152	11	426
4th	4	118	18	327

Autos



Trucks



EAST LEG TOTAL: 231

	1st	2nd	3rd	4th	Total
Rt	18	17	15	8	58
Thru	6	3	13	9	31
Lt	41	33	38	30	142

WEST LEG TOTAL: 86

	Total	1st	2nd	3rd	4th
Lt	11	4	5	1	1
Thru	24	5	5	10	4
Rt	51	11	8	18	14

PEAK HOUR FACTORS

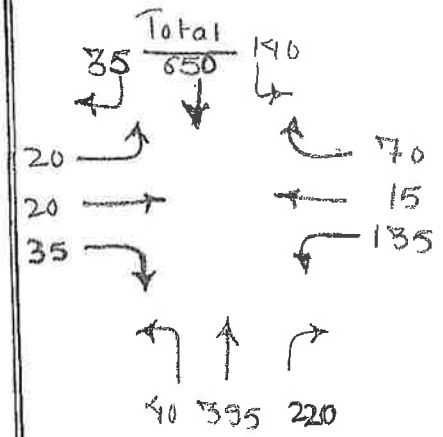
NORTH LEG = 0.79
SOUTH LEG = 0.93
EAST LEG = 0.88
WEST LEG = 0.74

ALL LEGS = 0.90

SOUTH LEG

TOTAL: 610

	Lt	Thru	Rt
1st	3	116	45
2nd	10	98	54
3rd	14	96	53
4th	11	73	37
Total	38	383	189



HOUR TOTAL: 1,565

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : BARSTOW
EAST-WEST STREET : VIRGINIA

BARSTOW
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						
4	92	11	0	0	0	0	0	1	0	0	0	108
2	67	14	0	0	0	0	1	0	0	0	0	84
0	119	9	1	0	0	0	0	0	0	0	0	129
7	159	32	1	0	0	0	0	0	0	1	1	201
5	152	10	0	0	0	0	0	0	0	0	1	168
4	117	18	0	0	0	0	0	0	0	1	0	140
2	125	19	0	1	0	0	1	0	0	0	0	148
2	112	11	0	0	0	0	0	0	0	0	0	125
26	943	124	2	1	0	0	2	1	0	2	2	1103
						SOUTH LEG						
39	82	23	0	0	0	0	0	0	0	0	0	144
42	69	19	0	0	0	0	0	0	0	0	0	130
45	116	3	0	0	0	0	0	0	0	0	0	164
54	98	10	0	0	0	0	0	0	0	0	0	162
53	96	14	0	0	0	0	0	0	0	0	0	163
37	72	11	0	0	0	0	1	0	0	0	0	121
43	87	9	0	0	0	0	0	0	0	0	0	139
36	92	7	0	0	0	0	0	0	0	0	0	135
349	712	96	0	0	0	0	1	0	0	0	0	1158
						EAST LEG						
12	14	36	0	0	0	0	0	0	0	0	0	62
10	15	33	0	0	0	0	0	0	0	0	0	58
18	5	41	0	1	0	0	0	0	0	0	0	65
17	2	33	0	1	0	0	0	0	0	0	0	53
15	13	38	0	0	0	0	0	0	0	0	0	66
8	9	30	0	0	0	0	0	0	0	0	0	47
16	10	31	0	0	0	0	0	0	0	0	0	57
15	9	25	0	0	0	0	0	0	0	0	0	49
111	77	267	0	2	0	0	0	0	0	0	0	457
						WEST LEG						
9	11	2	0	0	0	0	0	0	0	0	0	22
6	8	1	0	0	0	0	0	0	0	0	0	15
11	5	4	0	0	0	0	0	0	0	0	0	20
8	5	5	0	0	0	0	0	0	0	0	0	18
18	10	1	0	0	0	0	0	0	0	0	0	29
14	4	1	0	0	0	0	0	0	0	0	0	19
13	4	2	0	0	0	0	0	0	0	0	0	19
5	6	3	0	0	0	0	0	0	0	0	0	14
84	53	19	0	0	0	0	0	0	0	0	0	156

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: BARSTOW

EAST-WEST STREET: VIRGINIA

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

NORTH LEG

Rt	Thru	Lt	
15	439	68	Total
4	92	12	1st
2	68	14	2nd
1	119	9	3rd
8	160	33	4th

	1st	2nd	3rd	4th	Total
Rt	12	10	18	17	57
Thru	14	15	6	3	38
Lt	36	33	41	33	143

Total	1st	2nd	3rd	4th	
12	2	1	4	5	Lt
29	11	8	5	5	Thru
34	9	6	11	8	Rt

	Lt	Thru	Rt
1st	23	82	39
2nd	19	69	42
3rd	3	116	45
4th	10	98	54
Total	55	365	180

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: BARSTOW

EAST-WEST STREET: VIRGINIA

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

NORTH LEG

Rt	Thru	Lt	
13	509	59	Total
5	152	11	1st
4	118	18	2nd
2	127	19	3rd
2	112	11	4th

	1st	2nd	3rd	4th	Total
Rt	15	8	16	15	54
Thru	13	9	10	9	41
Lt	38	30	31	25	124

Total	1st	2nd	3rd	4th	
7	1	1	2	3	Lt
24	10	4	4	6	Thru
50	18	14	13	5	Rt

	Lt	Thru	Rt
1st	14	96	53
2nd	11	73	37
3rd	9	87	43
4th	7	92	36
Total	41	348	169

Prepared by NEWPORT TRAFFIC STUDIES