QEM Signalized Intersection Capacity Analysis
Foothill & Wakara 10/24/2013

	Wakara			Wakara			Foothill			Foothill		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations (#)	1	2	1	1	3	1	1	3	1	1	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor Flu	1.00	0.95	0.00	1.00	0.91	0.00	1.00	0.91	0.00	1.00	0.91	0.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Sat. Flow (prot)	1408	2815	1408	1408	4223	1408	0	4223	1408	0	4223	1408
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Sat. Flow (perm)	845	2815	1408	1293	4223	1408	367	4223	1408	629	4223	1408
Volume (vph)	28	0	97	803	1	560	15	738	141	124	1422	23
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	0	105	873	1	609	16	802	153	135	1546	25
RTOR Reduction (vph)	0	0	53	0	0	305	0	0	77	0	0	13
Lane Group Flow (vph)	30	0	52	873	1	304	16	802	76	135	1546	12
Turn Type	Prot+perm		Permitted	Prot+perm		Permitted	Permitted		Permitted	Permitted		Permitted
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Display Green, G (s)	23.5	25.5	25.5	50.9	39.3	39.3	90.2	90.2	90.2	90.2	90.2	90.2
Effective Green, g (s)	25.0	27.0	27.0	52.6	41.0	41.0	92.0	92.0	92.0	92.0	92.0	92.0
Display g/C Ratio	0.16	0.17	0.17	0.34	0.26	0.26	0.60	0.60	0.60	0.60	0.60	0.60
Clearance Time (s)	5.5	5.5	5.5	5.7	5.7	5.7	5.8	5.8	5.8	5.8	5.8	5.8
Lane Grp Cap (vph)	109	507	253	247	1154	385	54	2590	864	58	2590	864
v/s Ratio Prot	0.02	0.00		0.62	0.00		0.00	0.19		0.00	0.37	
v/s Ratio Perm	0.04		0.04	0.68		0.22	0.04		0.05	0.21		0.01
v/c Ratio	0.28	0.00	0.21	3.53	0.00	0.79	0.30	0.31	0.09	2.33	0.60	0.01
Uniform delay, d1 (s)	54.6	0.0	52.4	48.7	0.0	50.5	13.7	13.9	11.9	29.0	17.7	11.3
Progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2 (s)	6.3	0.0	1.8	1148.6	0.0	15.1	13.7	0.3	0.2	648.7	1.0	0.0
Delay (s)	60.9	0.0	54.2	1197.3	0.0	65.6	27.4	14.2	12.1	677.7	18.8	11.3
Level of Service	E	N/A	D	F	N/A	E	C	B	B	F	B	B
Approach Delay (s)		55.7			731.8			14.0			70.7	
Approach LOS		E			F			B			E	

Intersection Summary			
HCM Average Control Delay	312.8	HCM Level of Service	F
HCM Volume to Capacity Ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of Lost Time (s)	12.0
Intersection Capacity Utilization	106.6%	ICU Level of Service	G