

















Level Of Service Computation Report

Existing plus Project (Maximum Residential Scenario) Conditions
AM Peak Hour

























HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	74	25	15	201	56	45	32	7	32	77	93
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	24	74	25	15	201	56	45	32	7	32	77	93
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	257			99			396	422	50	367	406	128
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	257			99			396	422	50	367	406	128
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			89	94	99	94	85	90
cM capacity (veh/h)	1305			1492			418	507	1008	522	518	898
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	61	62	116	156	84	32	51	119				
Volume Left	24	0	15	0	45	32	0	0				
Volume Right	0	25	0	56	7	0	0	93				
cSH	1305	1700	1492	1700	473	522	518	775				
Volume to Capacity	0.02	0.04	0.01	0.09	0.18	0.06	0.10	0.15				
Queue Length 95th (ft)	1	0	1	0	16	5	8	13				
Control Delay (s)	3.2	0.0	1.0	0.0	14.3	12.3	12.7	10.5				
Lane LOS	A		A		B	B	B	B				
Approach Delay (s)	1.6		0.4		14.3	11.3						
Approach LOS					B	B						
Intersection Summary												
Average Delay			5.6									
Intersection Capacity Utilization			34.4%		ICU Level of Service				A			
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  						  		  	  		
Volume (vph)	10	549	34	0	0	0	0	102	21	52	187	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						4.5		4.5	4.5		
Lane Util. Factor		0.91						0.95		1.00	0.91		
Frt		0.99						0.97		1.00	1.00		
Flt Protected		1.00						1.00		0.95	1.00		
Satd. Flow (prot)		5037						3449		1770	5085		
Flt Permitted		1.00						1.00		0.67	1.00		
Satd. Flow (perm)		5037						3449		1256	5085		
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	
Adj. Flow (vph)	10	549	34	0	0	0	0	102	21	52	187	0	
RTOR Reduction (vph)	0	9	0	0	0	0	0	16	0	0	0	0	
Lane Group Flow (vph)	0	584	0	0	0	0	0	107	0	52	187	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		45.5						19.5		19.5	19.5		
Effective Green, g (s)		45.5						19.5		19.5	19.5		
Actuated g/C Ratio		0.61						0.26		0.26	0.26		
Clearance Time (s)		5.5						4.5		4.5	4.5		
Vehicle Extension (s)		3.0						3.0		3.0	3.0		
Lane Grp Cap (vph)		3055						896		326	1322		
v/s Ratio Prot								0.03			0.04		
v/s Ratio Perm		0.12								c0.04			
v/c Ratio		0.19						0.12		0.16	0.14		
Uniform Delay, d1		6.6						21.2		21.4	21.3		
Progression Factor		1.00						1.02		0.60	0.60		
Incremental Delay, d2		0.1						0.3		1.0	0.2		
Delay (s)		6.7						21.9		13.8	13.1		
Level of Service		A						C		B	B		
Approach Delay (s)		6.7			0.0			21.9			13.3		
Approach LOS		A			A			C			B		
Intersection Summary													
HCM 2000 Control Delay			10.3									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.18										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			30.5%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	0	0	0	101	270	260	9	25	90	0	0	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95
Frt					1.00	0.85		1.00	1.00			1.00
Flt Protected					0.99	1.00		0.95	1.00			1.00
Satd. Flow (prot)					3492	1583		1770	1863			3539
Flt Permitted					0.99	1.00		0.67	1.00			1.00
Satd. Flow (perm)					3492	1583		1241	1863			3539
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
Adj. Flow (vph)	0	0	0	101	270	260	9	25	90	0	0	135
RTOR Reduction (vph)	0	0	0	0	0	209	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	371	51	0	34	90	0	0	135
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA
Protected Phases					8				2			6
Permitted Phases				8		8	2	2				
Actuated Green, G (s)					14.8	14.8		51.2	51.2			51.2
Effective Green, g (s)					14.8	14.8		51.2	51.2			51.2
Actuated g/C Ratio					0.20	0.20		0.68	0.68			0.68
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)					689	312		847	1271			2415
v/s Ratio Prot									c0.05			0.04
v/s Ratio Perm					0.11	0.03		0.03				
v/c Ratio					0.54	0.16		0.04	0.07			0.06
Uniform Delay, d1					27.0	25.0		3.9	4.0			3.9
Progression Factor					0.83	0.43		0.49	0.52			0.89
Incremental Delay, d2					0.8	0.2		0.1	0.1			0.0
Delay (s)					23.1	11.1		2.0	2.2			3.5
Level of Service					C	B		A	A			A
Approach Delay (s)		0.0			18.2				2.1			3.6
Approach LOS		A			B				A			A
Intersection Summary												
HCM 2000 Control Delay			13.2		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.18									
Actuated Cycle Length (s)			75.0		Sum of lost time (s)				9.0			
Intersection Capacity Utilization			30.5%		ICU Level of Service				A			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	45
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	45
RTOR Reduction (vph)	14
Lane Group Flow (vph)	31
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	51.2
Effective Green, g (s)	51.2
Actuated g/C Ratio	0.68
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1080
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.03
Uniform Delay, d1	3.9
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	3.9
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	268	34	42	581	36	158	151	17	40	81	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	4999		1770	5041		1770	1834		1770	3539	1583
Flt Permitted	0.32	1.00		0.56	1.00		0.70	1.00		0.65	1.00	1.00
Satd. Flow (perm)	592	4999		1044	5041		1307	1834		1212	3539	1583
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
Adj. Flow (vph)	42	268	34	42	581	36	158	151	17	40	81	75
RTOR Reduction (vph)	0	27	0	0	13	0	0	3	0	0	0	25
Lane Group Flow (vph)	42	275	0	42	604	0	158	165	0	40	81	50
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	15.9	15.9		15.9	15.9		49.6	49.6		49.6	49.6	49.6
Effective Green, g (s)	15.9	15.9		15.9	15.9		49.6	49.6		49.6	49.6	49.6
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.66		0.66	0.66	0.66
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	125	1059		221	1068		864	1212		801	2340	1046
v/s Ratio Prot		0.06			c0.12			0.09			0.02	
v/s Ratio Perm	0.07			0.04			c0.12			0.03		0.03
v/c Ratio	0.34	0.26		0.19	0.57		0.18	0.14		0.05	0.03	0.05
Uniform Delay, d1	25.1	24.6		24.3	26.5		4.9	4.7		4.4	4.4	4.4
Progression Factor	1.00	1.00		1.00	1.00		0.62	0.61		1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1		0.4	0.7		0.5	0.2		0.1	0.0	0.1
Delay (s)	26.7	24.8		24.7	27.1		3.5	3.1		4.6	4.4	4.5
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		25.0			27.0			3.3			4.5	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			18.6				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.28									
Actuated Cycle Length (s)			75.0				Sum of lost time (s)			9.5		
Intersection Capacity Utilization			43.5%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street



















Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations						
Volume (vph)	139	772	412	27	79	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	0.99		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5427	4535		2959	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5427	4535		2959	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	139	772	412	27	79	59
RTOR Reduction (vph)	65	34	6	0	0	0
Lane Group Flow (vph)	60	752	433	0	138	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	55.0	55.0	24.0		21.0	
Effective Green, g (s)	55.0	55.0	24.0		21.0	
Actuated g/C Ratio	0.48	0.48	0.21		0.18	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	616	2595	946		540	
v/s Ratio Prot	0.05	c0.14	c0.10		c0.05	
v/s Ratio Perm						
v/c Ratio	0.10	0.29	0.46		0.26	
Uniform Delay, d1	16.4	18.2	39.8		40.3	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.3	1.6		0.3	
Delay (s)	16.7	18.5	41.4		40.5	
Level of Service	B	B	D		D	
Approach Delay (s)		18.2	41.4		40.5	
Approach LOS		B	D		D	

Intersection Summary

HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			


















HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	0	177	214	37	490	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5	5.0	5.0					
Lane Util. Factor					0.91	0.91	0.81	0.81					
Frt					0.95	0.85	1.00	1.00					
Flt Protected					1.00	1.00	0.95	1.00					
Satd. Flow (prot)					2895	1297	1290	5430					
Flt Permitted					1.00	1.00	0.95	1.00					
Satd. Flow (perm)					2895	1297	1290	5430					
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	
Adj. Flow (vph)	0	0	0	0	177	214	37	490	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	41	54	21	9	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	228	68	12	485	0	0	0	0	
Turn Type					NA	Perm	Perm	NA					
Protected Phases					8			2					
Permitted Phases						8	2						
Actuated Green, G (s)					64.0	64.0	41.5	41.5					
Effective Green, g (s)					64.0	64.0	41.5	41.5					
Actuated g/C Ratio					0.56	0.56	0.36	0.36					
Clearance Time (s)					4.5	4.5	5.0	5.0					
Vehicle Extension (s)					3.0	3.0	3.0	3.0					
Lane Grp Cap (vph)					1611	721	465	1959					
v/s Ratio Prot					c0.08								
v/s Ratio Perm						0.05	0.01	0.09					
v/c Ratio					0.14	0.09	0.03	0.25					
Uniform Delay, d1					12.3	11.9	23.7	25.8					
Progression Factor					1.00	1.00	1.91	1.19					
Incremental Delay, d2					0.2	0.3	0.1	0.3					
Delay (s)					12.5	12.2	45.3	31.0					
Level of Service					B	B	D	C					
Approach Delay (s)		0.0			12.4			31.9			0.0		
Approach LOS		A			B			C			A		
Intersection Summary													
HCM 2000 Control Delay			23.6		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.18										
Actuated Cycle Length (s)			115.0		Sum of lost time (s)				9.5				
Intersection Capacity Utilization			46.3%		ICU Level of Service				A				
Analysis Period (min)			15										
c	Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	8	70	51	7	125	99	13	54	0	73	69	13
Peak Hour 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
Hourly flow rate (vph)	8	70	51	7	125	99	13	54	0	73	69	13
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	129	231	67	108	48							
Volume Left (vph)	8	7	13	73	0							
Volume Right (vph)	51	99	0	0	13							
Hadj (s)	-0.19	-0.22	0.07	0.37	-0.16							
Departure Headway (s)	4.6	4.4	5.2	5.8	5.3							
Degree Utilization, x	0.16	0.28	0.10	0.17	0.07							
Capacity (veh/h)	732	768	641	582	639							
Control Delay (s)	8.5	9.2	8.7	8.8	7.5							
Approach Delay (s)	8.5	9.2	8.7	8.4								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.8									
Level of Service			A									
Intersection Capacity Utilization			32.1%	ICU Level of Service	A							
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (veh/h)	9	4	4	9	29	34	4	150	8	32	175	15	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour 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	
Hourly flow rate (vph)	9	4	4	9	29	34	4	150	8	32	175	15	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None						
Median storage (veh)													
Upstream signal (ft)												288	
pX, platoon unblocked													
vC, conflicting volume	378	412	95	320	416	79	190					158	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	378	412	95	320	416	79	190					158	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1					4.1	
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2	
p0 queue free %	98	99	100	98	94	96	100					98	
cM capacity (veh/h)	502	515	943	592	512	965	1381					1419	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2							
Volume Total	17	72	79	83	120	102							
Volume Left	9	9	4	0	32	0							
Volume Right	4	34	0	8	0	15							
cSH	568	673	1381	1700	1419	1700							
Volume to Capacity	0.03	0.11	0.00	0.05	0.02	0.06							
Queue Length 95th (ft)	2	9	0	0	2	0							
Control Delay (s)	11.5	11.0	0.4	0.0	2.2	0.0							
Lane LOS	B	B	A		A								
Approach Delay (s)	11.5	11.0	0.2		1.2								
Approach LOS	B	B											
Intersection Summary													
Average Delay			2.7										
Intersection Capacity Utilization			24.9%		ICU Level of Service				A				
Analysis Period (min)			15										























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	38	21	4	45	46	22	153	9	40	189	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.95			0.93			0.99			0.97	
Flt Protected	0.95	1.00			1.00			0.99			0.99	
Satd. Flow (prot)	1770	1763			1737			3492			3399	
Flt Permitted	0.70	1.00			0.99			0.91			0.90	
Satd. Flow (perm)	1295	1763			1730			3187			3079	
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
Adj. Flow (vph)	34	38	21	4	45	46	22	153	9	40	189	65
RTOR Reduction (vph)	0	12	0	0	26	0	0	5	0	0	34	0
Lane Group Flow (vph)	34	47	0	0	69	0	0	179	0	0	260	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	552	752			738			1444			1395	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.03				c0.04			0.06			c0.08	
v/c Ratio	0.06	0.06			0.09			0.12			0.19	
Uniform Delay, d1	12.7	12.7			12.8			11.9			12.2	
Progression Factor	1.00	1.00			1.00			1.00			0.55	
Incremental Delay, d2	0.2	0.2			0.2			0.2			0.3	
Delay (s)	12.9	12.8			13.1			12.1			7.0	
Level of Service	B	B			B			B			A	
Approach Delay (s)		12.8			13.1			12.1			7.0	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			10.1								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.14									
Actuated Cycle Length (s)			75.0								Sum of lost time (s)	9.0
Intersection Capacity Utilization			33.1%								ICU Level of Service	A
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 			
Volume (vph)	705	136	75	0	0	0	0	149	250	422	308	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00		
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1610	3272	1583					3539	1583	3433	1863		
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1610	3272	1583					3539	1583	3433	1863		
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	
Adj. Flow (vph)	705	136	75	0	0	0	0	149	250	422	308	0	
RTOR Reduction (vph)	0	0	54	0	0	0	0	0	162	0	0	0	
Lane Group Flow (vph)	352	489	21	0	0	0	0	149	88	422	308	0	
Turn Type	Split	NA	Prot					NA	Prot	Prot	NA		
Protected Phases	4	4	4					2	2	1	6		
Permitted Phases													
Actuated Green, G (s)	20.6	20.6	20.6					26.5	26.5	14.4	44.4		
Effective Green, g (s)	20.6	20.6	20.6					26.5	26.5	14.4	44.4		
Actuated g/C Ratio	0.27	0.27	0.27					0.35	0.35	0.19	0.59		
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	442	898	434					1250	559	659	1102		
v/s Ratio Prot	c0.22	0.15	0.01					0.04	0.06	c0.12	c0.17		
v/s Ratio Perm													
v/c Ratio	0.80	0.54	0.05					0.12	0.16	0.64	0.28		
Uniform Delay, d1	25.3	23.2	20.0					16.4	16.6	27.9	7.5		
Progression Factor	0.96	0.97	0.78					1.17	2.39	1.01	1.33		
Incremental Delay, d2	9.6	0.7	0.0					0.2	0.6	1.9	0.1		
Delay (s)	33.8	23.2	15.6					19.4	40.3	30.2	10.1		
Level of Service	C	C	B					B	D	C	B		
Approach Delay (s)		26.7			0.0			32.5			21.7		
Approach LOS		C			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			26.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.54										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			96.7%									ICU Level of Service	F
Analysis Period (min)			15										
c	Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	406	198	661	24	156	0	0	355	44
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	
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.98	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1593	3185	1425	1593	3185			4501	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1593	3185	1425	1593	3185			4501	
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
Adj. Flow (vph)	0	0	0	406	198	661	24	156	0	0	355	44
RTOR Reduction (vph)	0	0	0	0	0	423	0	0	0	0	17	0
Lane Group Flow (vph)	0	0	0	406	198	238	24	156	0	0	382	0
Turn Type				Split	NA	Prot	Prot	NA			NA	
Protected Phases				8	8	8	5	2			6	
Permitted Phases												
Actuated Green, G (s)				27.0	27.0	27.0	7.6	40.0			28.4	
Effective Green, g (s)				27.0	27.0	27.0	7.6	40.0			28.4	
Actuated g/C Ratio				0.36	0.36	0.36	0.10	0.53			0.38	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				573	1146	513	161	1698			1704	
v/s Ratio Prot				c0.25	0.06	0.17	c0.02	0.05			c0.08	
v/s Ratio Perm												
v/c Ratio				0.71	0.17	0.46	0.15	0.09			0.22	
Uniform Delay, d1				20.6	16.4	18.4	30.7	8.6			15.8	
Progression Factor				1.00	1.00	1.00	0.56	0.50			1.00	
Incremental Delay, d2				4.0	0.1	0.7	0.4	0.1			0.3	
Delay (s)				24.6	16.5	19.1	17.7	4.4			16.1	
Level of Service				C	B	B	B	A			B	
Approach Delay (s)		0.0			20.5			6.2			16.1	
Approach LOS		A			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			18.1	HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			75.0	Sum of lost time (s)				12.0				
Intersection Capacity Utilization			96.7%	ICU Level of Service				F				
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	525	109	0	0	0	0	424	83	82	428	0
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	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5605						3107		1593	3185	
Flt Permitted		1.00						1.00		0.41	1.00	
Satd. Flow (perm)		5605						3107		693	3185	
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
Adj. Flow (vph)	70	525	109	0	0	0	0	424	83	82	428	0
RTOR Reduction (vph)	0	55	0	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	0	649	0	0	0	0	0	480	0	82	428	0
Turn Type	Split	NA						NA		pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)		23.0						21.0		29.0	29.0	
Effective Green, g (s)		23.0						21.0		29.0	29.0	
Actuated g/C Ratio		0.38						0.35		0.48	0.48	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Vehicle Extension (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2148						1087		394	1539	
v/s Ratio Prot		c0.12						c0.15		0.01	c0.13	
v/s Ratio Perm										0.09		
v/c Ratio		0.30						0.44		0.21	0.28	
Uniform Delay, d1		12.9						15.0		10.6	9.3	
Progression Factor		1.00						1.00		0.45	0.43	
Incremental Delay, d2		0.1						1.3		0.3	0.4	
Delay (s)		13.0						16.3		5.1	4.4	
Level of Service		B						B		A	A	
Approach Delay (s)		13.0			0.0			16.3			4.5	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			11.5					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		12.0		
Intersection Capacity Utilization			51.8%					ICU Level of Service		A		
Analysis Period (min)			15									
c	Critical Lane Group											





















HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			 			  	
Volume (vph)	0	0	0	91	296	63	97	374	0	0	403	35
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	
Lane Util. Factor					0.91		1.00	0.95			0.91	
Flt					0.98		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4436		1593	3185			4522	
Flt Permitted					0.99		0.49	1.00			1.00	
Satd. Flow (perm)					4436		815	3185			4522	
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
Adj. Flow (vph)	0	0	0	91	296	63	97	374	0	0	403	35
RTOR Reduction (vph)	0	0	0	0	36	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	0	0	0	414	0	97	374	0	0	421	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					26.0		26.0	26.0			18.0	
Effective Green, g (s)					26.0		26.0	26.0			18.0	
Actuated g/C Ratio					0.43		0.43	0.43			0.30	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)					1922		405	1380			1356	
v/s Ratio Prot					c0.09		0.02	c0.12			c0.09	
v/s Ratio Perm							0.09					
v/c Ratio					0.22		0.24	0.27			0.31	
Uniform Delay, d1					10.6		11.0	10.9			16.2	
Progression Factor					1.00		0.26	0.31			1.89	
Incremental Delay, d2					0.3		1.3	0.4			0.6	
Delay (s)					10.9		4.2	3.8			31.2	
Level of Service					B		A	A			C	
Approach Delay (s)		0.0			10.9			3.9			31.2	
Approach LOS		A			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			15.0		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.27									
Actuated Cycle Length (s)			60.0		Sum of lost time (s)						12.0	
Intersection Capacity Utilization			51.8%		ICU Level of Service						A	
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	3	273	83	1	268	91	0	360	29	0	497	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frt		0.97			0.96			0.99			0.98	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3074			3064			3150			3124	
Flt Permitted		0.95			0.95			1.00			1.00	
Satd. Flow (perm)		2927			2924			3150			3124	
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
Adj. Flow (vph)	3	273	83	1	268	91	0	360	29	0	497	73
RTOR Reduction (vph)	0	47	0	0	56	0	0	10	0	0	20	0
Lane Group Flow (vph)	0	312	0	0	304	0	0	379	0	0	551	0
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.5			21.5			27.5			27.5	
Effective Green, g (s)		21.5			21.5			27.5			27.5	
Actuated g/C Ratio		0.36			0.36			0.46			0.46	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Lane Grp Cap (vph)		1048			1047			1443			1431	
v/s Ratio Prot								0.12			c0.18	
v/s Ratio Perm		c0.11			0.10							
v/c Ratio		0.30			0.29			0.26			0.38	
Uniform Delay, d1		13.8			13.8			10.0			10.7	
Progression Factor		1.00			1.00			1.52			1.00	
Incremental Delay, d2		0.7			0.7			0.4			0.8	
Delay (s)		14.6			14.5			15.6			11.5	
Level of Service		B			B			B			B	
Approach Delay (s)		14.6			14.5			15.6			11.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.7								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			40.8%								ICU Level of Service	A
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											 	
Volume (veh/h)	0	26	15	12	52	0	0	0	0	12	13	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	26	15	12	52	0	0	0	0	12	13	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	52			41			126	110	34	110	117	52
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	52			41			126	110	34	110	117	52
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	98	99
cM capacity (veh/h)	1554			1568			824	775	1040	864	767	1016
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	41	64	18	16								
Volume Left	0	12	12	0								
Volume Right	15	0	0	10								
cSH	1700	1568	827	901								
Volume to Capacity	0.02	0.01	0.02	0.02								
Queue Length 95th (ft)	0	1	2	1								
Control Delay (s)	0.0	1.4	9.5	9.1								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.4	9.3									
Approach LOS			A									
Intersection Summary												
Average Delay			3.0									
Intersection Capacity Utilization			20.1%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	28	13	15	35	0	0	0	0	6	3	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	28	13	15	35	0	0	0	0	6	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked												
vC, conflicting volume	35			41			103	100	34	100	106	35
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			41			103	100	34	100	106	35
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	100	100
cM capacity (veh/h)	1576			1568			867	783	1039	876	777	1038
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	41	50	8	4								
Volume Left	0	15	6	0								
Volume Right	13	0	0	2								
cSH	1700	1568	854	907								
Volume to Capacity	0.02	0.01	0.01	0.00								
Queue Length 95th (ft)	0	1	1	0								
Control Delay (s)	0.0	2.2	9.3	9.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	2.2	9.2									
Approach LOS			A									
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			19.3%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
















17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	62	124	168	70	64	100
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	62	124	168	70	64	100
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		256	124	248	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		256	124	248	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	96		70	91	90	91
cM capacity (veh/h)	1623		567	737	630	1085
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total	62	124	238	64	100	
Volume Left	62	0	168	0	0	
Volume Right	0	124	0	0	100	
cSH	1623	1700	608	630	1085	
Volume to Capacity	0.04	0.07	0.39	0.10	0.09	
Queue Length 95th (ft)	3	0	46	8	8	
Control Delay (s)	7.3	0.0	14.7	11.4	8.7	
Lane LOS	A		B	B	A	
Approach Delay (s)	2.4		14.7	9.7		
Approach LOS			B	A		
Intersection Summary						
Average Delay			9.4			
Intersection Capacity Utilization			29.8%	ICU Level of Service	A	
Analysis Period (min)			15			





















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	51	214	0	0	0	0	0	533	1197	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0						5.0	5.0				
Lane Util. Factor		0.91						0.91	0.88				
Frt		1.00						1.00	0.85				
Flt Protected		0.99						1.00	1.00				
Satd. Flow (prot)		4533						4577	2508				
Flt Permitted		0.99						1.00	1.00				
Satd. Flow (perm)		4533						4577	2508				
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	
Adj. Flow (vph)	51	214	0	0	0	0	0	533	1197	0	0	0	
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	539	0	0	0	
Lane Group Flow (vph)	0	237	0	0	0	0	0	533	658	0	0	0	
Turn Type	Perm	NA						NA	custom				
Protected Phases		2						1					
Permitted Phases	2								5				
Actuated Green, G (s)		27.0						23.0	29.0				
Effective Green, g (s)		27.0						23.0	29.0				
Actuated g/C Ratio		0.45						0.38	0.48				
Clearance Time (s)		5.0						5.0	5.0				
Vehicle Extension (s)		3.0						3.0	3.0				
Lane Grp Cap (vph)		2039						1754	1212				
v/s Ratio Prot								0.12					
v/s Ratio Perm		0.05							c0.26				
v/c Ratio		0.12						0.30	0.54				
Uniform Delay, d1		9.6						12.9	10.9				
Progression Factor		1.00						1.00	1.00				
Incremental Delay, d2		0.1						0.4	1.7				
Delay (s)		9.7						13.4	12.6				
Level of Service		A						B	B				
Approach Delay (s)		9.7			0.0			12.8			0.0		
Approach LOS		A			A			B			A		
Intersection Summary													
HCM 2000 Control Delay			12.4									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.37										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			93.0%									ICU Level of Service	F
Analysis Period (min)			15										
c	Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

19: Jackson Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  						 		 			
Volume (vph)	260	366	418	0	0	0	0	217	33	66	89	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.5		5.5	5.5		
Lane Util. Factor		0.91						1.00		1.00	1.00		
Frt		0.94						0.98		1.00	1.00		
Flt Protected		0.99						1.00		0.95	1.00		
Satd. Flow (prot)		4721						1830		1770	1863		
Flt Permitted		0.99						1.00		0.57	1.00		
Satd. Flow (perm)		4721						1830		1055	1863		
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	
Adj. Flow (vph)	260	366	418	0	0	0	0	217	33	66	89	0	
RTOR Reduction (vph)	0	160	0	0	0	0	0	7	0	0	0	0	
Lane Group Flow (vph)	0	884	0	0	0	0	0	243	0	66	89	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		34.5						29.5		29.5	29.5		
Effective Green, g (s)		34.5						29.5		29.5	29.5		
Actuated g/C Ratio		0.46						0.39		0.39	0.39		
Clearance Time (s)		5.5						5.5		5.5	5.5		
Lane Grp Cap (vph)		2171						719		414	732		
v/s Ratio Prot								c0.13			0.05		
v/s Ratio Perm		0.19								0.06			
v/c Ratio		0.41						0.34		0.16	0.12		
Uniform Delay, d1		13.5						15.9		14.7	14.5		
Progression Factor		1.00						1.00		0.68	0.70		
Incremental Delay, d2		0.6						1.3		0.8	0.3		
Delay (s)		14.0						17.2		10.8	10.4		
Level of Service		B						B		B	B		
Approach Delay (s)		14.0			0.0			17.2			10.6		
Approach LOS		B			A			B			B		
Intersection Summary													
HCM 2000 Control Delay			14.2									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.37										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			69.7%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	2	279	50	279	238	0	0	178	1262	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			5.5	4.0	
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425	
Flt Permitted				0.95	1.00	1.00	0.64	1.00			1.00	1.00	
Satd. Flow (perm)				1593	1676	1425	1081	1676			1676	1425	
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	
Adj. Flow (vph)	0	0	0	2	279	50	279	238	0	0	178	1262	
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	2	279	13	279	238	0	0	178	1262	
Turn Type				Split	NA	Perm	Perm	NA			NA	Free	
Protected Phases				8	8			2			6		
Permitted Phases						8	2					Free	
Actuated Green, G (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Effective Green, g (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Actuated g/C Ratio				0.26	0.26	0.26	0.59	0.59			0.59	1.00	
Clearance Time (s)				5.5	5.5	5.5	5.5	5.5			5.5		
Lane Grp Cap (vph)				414	435	370	641	994			994	1425	
v/s Ratio Prot				0.00	0.17			0.14			0.11		
v/s Ratio Perm						0.01	0.26					c0.89	
v/c Ratio				0.00	0.64	0.04	0.44	0.24			0.18	0.89	
Uniform Delay, d1				20.6	24.6	20.7	8.4	7.2			6.9	0.0	
Progression Factor				1.00	1.00	1.00	1.08	1.09			1.00	1.00	
Incremental Delay, d2				0.0	7.1	0.2	2.0	0.5			0.4	8.4	
Delay (s)				20.6	31.7	20.9	11.1	8.4			7.3	8.4	
Level of Service				C	C	C	B	A			A	A	
Approach Delay (s)		0.0			30.0			9.9			8.3		
Approach LOS		A			C			A			A		
Intersection Summary													
HCM 2000 Control Delay			11.8		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			1.04										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					11.0			
Intersection Capacity Utilization			69.7%		ICU Level of Service					C			
Analysis Period (min)			15										
c Critical Lane Group													






















HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	442	1113	0	0	0	0	265	67	20	255	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.92	0.85					0.97			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		3969	1226					1631			1670	
Flt Permitted		1.00	1.00					1.00			0.97	
Satd. Flow (perm)		3969	1226					1631			1625	
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
Adj. Flow (vph)	32	442	1113	0	0	0	0	265	67	20	255	0
RTOR Reduction (vph)	0	355	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	676	556	0	0	0	0	317	0	0	275	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		19.0	60.0					32.0			32.0	
Effective Green, g (s)		19.0	60.0					32.0			32.0	
Actuated g/C Ratio		0.32	1.00					0.53			0.53	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1256	1226					869			866	
v/s Ratio Prot		0.17						0.19				
v/s Ratio Perm			c0.45								0.17	
v/c Ratio		0.54	0.45					0.36			0.32	
Uniform Delay, d1		16.9	0.0					8.1			7.9	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		1.7	1.2					1.2			1.0	
Delay (s)		18.5	1.2					9.3			8.8	
Level of Service		B	A					A			A	
Approach Delay (s)		12.5			0.0			9.3			8.8	
Approach LOS		B			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.5								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	9.0
Intersection Capacity Utilization			60.2%								ICU Level of Service	B
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  								  	  		
Volume (vph)	0	416	17	0	0	0	0	0	0	548	127	0	
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		
Lane Util. Factor		0.91								0.91	0.91		
Frt		0.99								1.00	1.00		
Flt Protected		1.00								0.95	0.97		
Satd. Flow (prot)		5055								1610	3278		
Flt Permitted		1.00								0.95	0.97		
Satd. Flow (perm)		5055								1610	3278		
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	
Adj. Flow (vph)	0	416	17	0	0	0	0	0	0	548	127	0	
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	119	119	0	
Lane Group Flow (vph)	0	424	0	0	0	0	0	0	0	155	282	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		16.0								22.0	22.0		
Effective Green, g (s)		16.0								22.0	22.0		
Actuated g/C Ratio		0.35								0.48	0.48		
Clearance Time (s)		4.0								4.0	4.0		
Lane Grp Cap (vph)		1758								770	1567		
v/s Ratio Prot		c0.08											
v/s Ratio Perm										c0.10	0.09		
v/c Ratio		0.24								0.20	0.18		
Uniform Delay, d1		10.7								6.9	6.8		
Progression Factor		1.00								1.00	1.00		
Incremental Delay, d2		0.3								0.6	0.3		
Delay (s)		11.0								7.5	7.1		
Level of Service		B								A	A		
Approach Delay (s)		11.0			0.0			0.0			7.3		
Approach LOS		B			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			8.7									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.22										
Actuated Cycle Length (s)			46.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			29.8%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

23: Madison Street & 6th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	
Volume (vph)	0	0	0	31	164	0	0	0	0	0	639	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frt					1.00						0.96	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					4541						4407	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					4541						4407	
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
Adj. Flow (vph)	0	0	0	31	164	0	0	0	0	0	639	210
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	107	0
Lane Group Flow (vph)	0	0	0	0	174	0	0	0	0	0	742	0
Turn Type				Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases												
Actuated Green, G (s)					15.0						22.0	
Effective Green, g (s)					15.0						22.0	
Actuated g/C Ratio					0.33						0.49	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1513						2154	
v/s Ratio Prot					c0.04						c0.17	
v/s Ratio Perm												
v/c Ratio					0.12						0.34	
Uniform Delay, d1					10.4						7.1	
Progression Factor					1.07						1.00	
Incremental Delay, d2					0.1						0.4	
Delay (s)					11.3						7.5	
Level of Service					B						A	
Approach Delay (s)		0.0			11.3			0.0			7.5	
Approach LOS		A			B			A			A	















Intersection Summary

HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		




















c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	331	193	0	0	0	0	0	0	121	607	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frt		0.94									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5448									4539	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5448									4539	
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
Adj. Flow (vph)	0	331	193	0	0	0	0	0	0	121	607	0
RTOR Reduction (vph)	0	119	0	0	0	0	0	0	0	0	50	0
Lane Group Flow (vph)	0	405	0	0	0	0	0	0	0	0	678	0
Turn Type		NA								Perm	NA	
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		23.0									29.0	
Effective Green, g (s)		23.0									29.0	
Actuated g/C Ratio		0.38									0.48	
Clearance Time (s)		4.0									4.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		2088									2193	
v/s Ratio Prot		c0.07										
v/s Ratio Perm											0.15	
v/c Ratio		0.19									0.31	
Uniform Delay, d1		12.3									9.4	
Progression Factor		0.53									1.00	
Incremental Delay, d2		0.2									0.4	
Delay (s)		6.7									9.8	
Level of Service		A									A	
Approach Delay (s)		6.7			0.0			0.0			9.8	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.5		HCM 2000 Level of Service					A		
HCM 2000 Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			60.0		Sum of lost time (s)				8.0			
Intersection Capacity Utilization			38.3%		ICU Level of Service				A			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Volume (veh/h)	192	0	75	2	0	0	165	227	0	0	201	127
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	192	0	75	2	0	0	165	227	0	0	201	127
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											563	
pX, platoon unblocked												
vC, conflicting volume	708	822	164	732	885	114	328			227		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	708	822	164	732	885	114	328			227		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	33	100	91	99	100	100	87			100		
cM capacity (veh/h)	289	266	852	253	244	918	1228			1339		
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	192	75	165	114	114	134	194					
Volume Left	192	0	165	0	0	0	0					
Volume Right	0	75	0	0	0	0	127					
cSH	289	852	1228	1700	1700	1700	1700					
Volume to Capacity	0.67	0.09	0.13	0.07	0.07	0.08	0.11					
Queue Length 95th (ft)	109	7	12	0	0	0	0					
Control Delay (s)	39.2	9.6	8.4	0.0	0.0	0.0	0.0					
Lane LOS	E	A	A									
Approach Delay (s)	30.9		3.5					0.0				
Approach LOS	D											
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			Err%	ICU Level of Service	H							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street






















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	57	65	58	381	289	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.93		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1689		1770	1863	1863	1583
Flt Permitted	0.98		0.58	1.00	1.00	1.00
Satd. Flow (perm)	1689		1086	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	57	65	58	381	289	52
RTOR Reduction (vph)	57	0	0	0	0	14
Lane Group Flow (vph)	65	0	58	381	289	38
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	6.4		39.4	39.4	39.4	39.4
Effective Green, g (s)	6.4		39.4	39.4	39.4	39.4
Actuated g/C Ratio	0.12		0.73	0.73	0.73	0.73
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200		795	1364	1364	1159
v/s Ratio Prot	c0.04			c0.20	0.16	
v/s Ratio Perm			0.05			0.02
v/c Ratio	0.32		0.07	0.28	0.21	0.03
Uniform Delay, d1	21.7		2.0	2.4	2.3	2.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.2	0.5	0.4	0.1
Delay (s)	22.7		2.2	2.9	2.6	2.0
Level of Service	C		A	A	A	A
Approach Delay (s)	22.7			2.8	2.5	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			
















HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Volume (vph)	219	555	126	0	0	0	0	263	173	2	168	0
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	
Lane Util. Factor		0.91						0.95			1.00	
Frt		0.98						0.94			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		4919						3329			1862	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		4919						3329			1854	
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
Adj. Flow (vph)	219	555	126	0	0	0	0	263	173	2	168	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	115	0	0	0	0
Lane Group Flow (vph)	0	850	0	0	0	0	0	321	0	0	170	0
Turn Type	Split	NA						NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases										6		
Actuated Green, G (s)		22.0						15.0			15.0	
Effective Green, g (s)		22.0						15.0			15.0	
Actuated g/C Ratio		0.49						0.33			0.33	
Clearance Time (s)		4.0						4.0			4.0	
Lane Grp Cap (vph)		2404						1109			618	
v/s Ratio Prot		c0.17						c0.10				
v/s Ratio Perm											0.09	
v/c Ratio		0.35						0.29			0.28	
Uniform Delay, d1		7.1						11.1			11.0	
Progression Factor		1.00						1.00			1.22	
Incremental Delay, d2		0.4						0.7			1.1	
Delay (s)		7.5						11.7			14.4	
Level of Service		A						B			B	
Approach Delay (s)		7.5			0.0			11.7			14.4	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			9.5					HCM 2000 Level of Service			A	
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			45.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			37.5%					ICU Level of Service		A		
Analysis Period (min)			15									
c	Critical Lane Group											















HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street


















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	151	66	567	116	393	0	0	0	0	
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					
Lane Util. Factor					0.91	0.91		0.95					
Frt					0.91	0.85		1.00					
Flt Protected					0.99	1.00		0.99					
Satd. Flow (prot)					2750	1297		3149					
Flt Permitted					0.99	1.00		0.99					
Satd. Flow (perm)					2750	1297		3149					
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	
Adj. Flow (vph)	0	0	0	151	66	567	116	393	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	120	120	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	381	163	0	509	0	0	0	0	
Turn Type				Split	NA	Perm	Split	NA					
Protected Phases				8	8		2	2					
Permitted Phases						8							
Actuated Green, G (s)					22.0	22.0		15.0					
Effective Green, g (s)					22.0	22.0		15.0					
Actuated g/C Ratio					0.49	0.49		0.33					
Clearance Time (s)					4.0	4.0		4.0					
Lane Grp Cap (vph)					1344	634		1049					
v/s Ratio Prot					c0.14			c0.16					
v/s Ratio Perm						0.13							
v/c Ratio					0.28	0.26		0.49					
Uniform Delay, d1					6.8	6.7		11.9					
Progression Factor					1.00	1.00		0.89					
Incremental Delay, d2					0.5	1.0		1.5					
Delay (s)					7.4	7.7		12.2					
Level of Service					A	A		B					
Approach Delay (s)		0.0			7.5			12.2			0.0		
Approach LOS		A			A			B			A		
Intersection Summary													
HCM 2000 Control Delay			9.3		HCM 2000 Level of Service				A				
HCM 2000 Volume to Capacity ratio			0.37										
Actuated Cycle Length (s)			45.0		Sum of lost time (s)				8.0				
Intersection Capacity Utilization			48.5%		ICU Level of Service				A				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	324	0	0	0	0	0	850	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5708						4509				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5708						4509				
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
Adj. Flow (vph)	84	324	0	0	0	0	0	850	93	0	0	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	0	373	0	0	0	0	0	921	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		27.0						24.0				
Effective Green, g (s)		27.0						24.0				
Actuated g/C Ratio		0.45						0.40				
Clearance Time (s)		4.5						4.5				
Lane Grp Cap (vph)		2568						1803				
v/s Ratio Prot								c0.20				
v/s Ratio Perm		0.07										
v/c Ratio		0.15						0.51				
Uniform Delay, d1		9.7						13.6				
Progression Factor		1.17						1.00				
Incremental Delay, d2		0.1						1.0				
Delay (s)		11.5						14.6				
Level of Service		B						B				
Approach Delay (s)		11.5			0.0			14.6			0.0	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.7					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)			9.0	
Intersection Capacity Utilization			67.6%					ICU Level of Service			C	
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	21	231	4	4	264	190	7	2	2	267	4	103
Peak Hour 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
Hourly flow rate (vph)	21	231	4	4	264	190	7	2	2	267	4	103
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	256	268	190	11	374							
Volume Left (vph)	21	4	0	7	267							
Volume Right (vph)	4	0	190	2	103							
Hadj (s)	0.04	0.04	-0.67	0.05	0.01							
Departure Headway (s)	5.9	6.1	5.4	6.6	5.7							
Degree Utilization, x	0.42	0.46	0.29	0.02	0.59							
Capacity (veh/h)	575	562	633	444	598							
Control Delay (s)	13.1	13.0	9.4	9.8	16.7							
Approach Delay (s)	13.1	11.5		9.8	16.7							
Approach LOS	B	B		A	C							
Intersection Summary												
Delay			13.6									
Level of Service			B									
Intersection Capacity Utilization			62.7%	ICU Level of Service	B							
Analysis Period (min)			15									





























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	275	197	69	23	202	64	75	836	36	40	442	235	
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	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3411		1770	3517		1770	3539	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3411		1770	3517		1770	3539	1583	
Peak-hour factor, 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)	299	214	75	25	220	70	82	909	39	43	480	255	
RTOR Reduction (vph)	0	0	52	0	33	0	0	2	0	0	0	215	
Lane Group Flow (vph)	299	214	23	25	257	0	82	946	0	43	480	40	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over	
Protected Phases	7	4		3	8		5	2		1	6	7	
Permitted Phases			4										
Actuated Green, G (s)	11.7	22.4	22.4	2.7	13.4		7.1	28.1		4.5	25.5	11.7	
Effective Green, g (s)	11.7	22.4	22.4	2.7	13.4		7.1	28.1		4.5	25.5	11.7	
Actuated g/C Ratio	0.16	0.30	0.30	0.04	0.18		0.10	0.38		0.06	0.35	0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	544	1075	481	64	620		170	1340		108	1224	251	
v/s Ratio Prot	c0.09	0.06		0.01	c0.08		c0.05	c0.27		0.02	0.14	0.03	
v/s Ratio Perm			0.01										
v/c Ratio	0.55	0.20	0.05	0.39	0.41		0.48	0.71		0.40	0.39	0.16	
Uniform Delay, d1	28.6	19.0	18.1	34.7	26.7		31.6	19.3		33.3	18.2	26.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.1	0.0	3.9	0.5		2.2	3.1		2.4	0.9	0.3	
Delay (s)	29.7	19.1	18.2	38.6	27.1		33.7	22.4		35.7	19.2	27.1	
Level of Service	C	B	B	D	C		C	C		D	B	C	
Approach Delay (s)		24.4			28.0			23.3			22.7		
Approach LOS		C			C			C			C		
Intersection Summary													
HCM 2000 Control Delay			23.9									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.60										
Actuated Cycle Length (s)			73.7									Sum of lost time (s)	16.0
Intersection Capacity Utilization			56.4%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue


















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	 		 	 	
Volume (vph)	93	173	76	33	171	82	107	808	42	75	307	34
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
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.95		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583
Peak-hour factor, 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)	101	188	83	36	186	89	116	878	46	82	334	37
RTOR Reduction (vph)	0	50	0	0	62	0	0	0	28	0	0	23
Lane Group Flow (vph)	101	221	0	36	213	0	116	878	18	82	334	14
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.4	15.7		2.9	11.2		6.0	26.0	26.0	5.4	25.4	25.4
Effective Green, g (s)	7.4	15.7		2.9	11.2		6.0	26.0	26.0	5.4	25.4	25.4
Actuated g/C Ratio	0.11	0.24		0.04	0.17		0.09	0.39	0.39	0.08	0.38	0.38
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	198	803		77	571		312	1394	623	280	1361	609
v/s Ratio Prot	c0.06	0.07		0.02	c0.06		c0.03	c0.25		0.02	0.09	
v/s Ratio Perm									0.01			0.01
v/c Ratio	0.51	0.27		0.47	0.37		0.37	0.63	0.03	0.29	0.25	0.02
Uniform Delay, d1	27.6	20.5		30.8	24.3		28.2	16.1	12.3	28.5	13.8	12.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.2		4.4	0.4		0.7	2.2	0.1	0.6	0.4	0.1
Delay (s)	29.8	20.7		35.2	24.7		29.0	18.3	12.3	29.1	14.2	12.7
Level of Service	C	C		D	C		C	B	B	C	B	B
Approach Delay (s)		23.2			25.9			19.2			16.8	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			20.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			66.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			51.5%				ICU Level of Service			A		
Analysis Period (min)			15									
c	Critical Lane Group											

Level Of Service Computation Report

Existing plus Project (Maximum Residential Scenario) Conditions
PM Peak Hour

















HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	52	273	22	14	125	91	41	116	25	46	59	37
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	52	273	22	14	125	91	41	116	25	46	59	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	216			295			545	632	148	522	598	108
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	216			295			545	632	148	522	598	108
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			88	69	97	85	85	96
cM capacity (veh/h)	1351			1263			345	377	873	312	394	925
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	188	158	76	154	182	46	39	57				
Volume Left	52	0	14	0	41	46	0	0				
Volume Right	0	22	0	91	25	0	0	37				
cSH	1351	1700	1263	1700	400	312	394	630				
Volume to Capacity	0.04	0.09	0.01	0.09	0.46	0.15	0.10	0.09				
Queue Length 95th (ft)	3	0	1	0	58	13	8	7				
Control Delay (s)	2.4	0.0	1.5	0.0	21.3	18.5	15.1	11.3				
Lane LOS	A		A		C	C	C	B				
Approach Delay (s)	1.3		0.5		21.3	14.7						
Approach LOS					C	B						
Intersection Summary												
Average Delay			7.3									
Intersection Capacity Utilization			43.1%		ICU Level of Service				A			
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	9	730	29	0	0	0	0	220	25	103	109	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						4.5		4.5	4.5		
Lane Util. Factor		0.91						0.95		1.00	0.91		
Frt		0.99						0.98		1.00	1.00		
Flt Protected		1.00						1.00		0.95	1.00		
Satd. Flow (prot)		5054						3485		1770	5085		
Flt Permitted		1.00						1.00		0.57	1.00		
Satd. Flow (perm)		5054						3485		1063	5085		
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	
Adj. Flow (vph)	9	730	29	0	0	0	0	220	25	103	109	0	
RTOR Reduction (vph)	0	5	0	0	0	0	0	9	0	0	0	0	
Lane Group Flow (vph)	0	763	0	0	0	0	0	236	0	103	109	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		60.5						19.5		19.5	19.5		
Effective Green, g (s)		60.5						19.5		19.5	19.5		
Actuated g/C Ratio		0.67						0.22		0.22	0.22		
Clearance Time (s)		5.5						4.5		4.5	4.5		
Vehicle Extension (s)		3.0						3.0		3.0	3.0		
Lane Grp Cap (vph)		3397						755		230	1101		
v/s Ratio Prot								0.07			0.02		
v/s Ratio Perm		0.15								c0.10			
v/c Ratio		0.22						0.31		0.45	0.10		
Uniform Delay, d1		5.7						29.6		30.6	28.2		
Progression Factor		1.00						1.00		0.87	0.86		
Incremental Delay, d2		0.2						1.1		6.2	0.2		
Delay (s)		5.8						30.7		32.7	24.4		
Level of Service		A						C		C	C		
Approach Delay (s)		5.8			0.0			30.7			28.4		
Approach LOS		A			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			14.7									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.28										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			39.6%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	0	0	0	30	145	265	12	32	195	0	0	170	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95	
Frt					1.00	0.85		1.00	1.00			1.00	
Flt Protected					0.99	1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3509	1583		1770	1863			3539	
Flt Permitted					0.99	1.00		0.64	1.00			1.00	
Satd. Flow (perm)					3509	1583		1200	1863			3539	
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	
Adj. Flow (vph)	0	0	0	30	145	265	12	32	195	0	0	170	
RTOR Reduction (vph)	0	0	0	0	0	233	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	175	32	0	44	195	0	0	170	
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA	
Protected Phases					8				2			6	
Permitted Phases				8		8	2	2					
Actuated Green, G (s)					10.8	10.8		70.2	70.2			70.2	
Effective Green, g (s)					10.8	10.8		70.2	70.2			70.2	
Actuated g/C Ratio					0.12	0.12		0.78	0.78			0.78	
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5	
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					421	189		936	1453			2760	
v/s Ratio Prot									c0.10			0.05	
v/s Ratio Perm					0.05	0.02		0.04					
v/c Ratio					0.42	0.17		0.05	0.13			0.06	
Uniform Delay, d1					36.7	35.6		2.3	2.4			2.3	
Progression Factor					1.00	1.88		0.11	0.44			1.00	
Incremental Delay, d2					0.7	0.4		0.1	0.2			0.0	
Delay (s)					37.3	67.3		0.3	1.2			2.3	
Level of Service					D	E		A	A			A	
Approach Delay (s)		0.0			55.3				1.1			2.3	
Approach LOS		A			E				A			A	
Intersection Summary													
HCM 2000 Control Delay			28.4		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.17										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)				9.0				
Intersection Capacity Utilization			39.6%		ICU Level of Service				A				
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis



























3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	34
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	34
RTOR Reduction (vph)	7
Lane Group Flow (vph)	27
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	70.2
Effective Green, g (s)	70.2
Actuated g/C Ratio	0.78
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1234
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	2.2
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	2.2
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Volume (vph)	94	705	66	36	325	35	189	213	45	53	95	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5020		1770	5011		1770	1814		1770	3539	1583
Flt Permitted	0.53	1.00		0.32	1.00		0.69	1.00		0.54	1.00	1.00
Satd. Flow (perm)	985	5020		589	5011		1290	1814		1006	3539	1583
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
Adj. Flow (vph)	94	705	66	36	325	35	189	213	45	53	95	60
RTOR Reduction (vph)	0	13	0	0	15	0	0	9	0	0	0	34
Lane Group Flow (vph)	94	758	0	36	345	0	189	249	0	53	95	26
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Effective Green, g (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	451	2303		270	2299		553	778		431	1519	679
v/s Ratio Prot		c0.15			0.07			0.14			0.03	
v/s Ratio Perm	0.10			0.06			c0.15			0.05		0.02
v/c Ratio	0.21	0.33		0.13	0.15		0.34	0.32		0.12	0.06	0.04
Uniform Delay, d1	13.8	14.7		13.3	13.4		16.2	16.0		14.6	14.2	14.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.4		1.0	0.1		1.7	1.1		0.1	0.0	0.0
Delay (s)	14.8	15.0		14.3	13.5		17.9	17.1		14.7	14.2	14.1
Level of Service	B	B		B	B		B	B		B	B	B
Approach Delay (s)		15.0			13.6			17.5			14.3	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)		9.5			
Intersection Capacity Utilization			51.5%				ICU Level of Service		A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street



















Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations						
Volume (vph)	158	500	1114	35	61	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	1.00		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5415	4556		2984	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5415	4556		2984	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	158	500	1114	35	61	33
RTOR Reduction (vph)	90	65	3	0	0	0
Lane Group Flow (vph)	36	467	1146	0	94	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	24.0	24.0	29.2		16.8	
Effective Green, g (s)	24.0	24.0	29.2		16.8	
Actuated g/C Ratio	0.28	0.28	0.34		0.20	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	364	1528	1565		589	
v/s Ratio Prot	0.03	c0.09	c0.25		c0.03	
v/s Ratio Perm						
v/c Ratio	0.10	0.31	0.73		0.16	
Uniform Delay, d1	22.5	24.0	24.5		28.3	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.5	0.5	3.1		0.1	
Delay (s)	23.0	24.5	27.5		28.4	
Level of Service	C	C	C		C	
Approach Delay (s)		24.2	27.5		28.4	
Approach LOS		C	C		C	

Intersection Summary

HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			


















HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	0	216	696	29	1436	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5	5.0	5.0					
Lane Util. Factor					0.91	0.91	0.81	0.81					
Frt					0.91	0.85	1.00	1.00					
Flt Protected					1.00	1.00	0.95	1.00					
Satd. Flow (prot)					2769	1297	1290	5431					
Flt Permitted					1.00	1.00	0.95	1.00					
Satd. Flow (perm)					2769	1297	1290	5431					
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	
Adj. Flow (vph)	0	0	0	0	216	696	29	1436	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	2	16	12	9	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	562	332	14	1430	0	0	0	0	
Turn Type					NA	Perm	Perm	NA					
Protected Phases					8			2					
Permitted Phases						8	2						
Actuated Green, G (s)					31.3	31.3	44.2	44.2					
Effective Green, g (s)					31.3	31.3	44.2	44.2					
Actuated g/C Ratio					0.37	0.37	0.52	0.52					
Clearance Time (s)					4.5	4.5	5.0	5.0					
Vehicle Extension (s)					3.0	3.0	3.0	3.0					
Lane Grp Cap (vph)					1019	477	670	2824					
v/s Ratio Prot					0.20								
v/s Ratio Perm						c0.26	0.01	0.26					
v/c Ratio					0.55	0.70	0.02	0.51					
Uniform Delay, d1					21.3	22.8	9.9	13.3					
Progression Factor					1.00	1.00	0.03	0.25					
Incremental Delay, d2					0.6	4.4	0.0	0.5					
Delay (s)					21.9	27.2	0.4	3.8					
Level of Service					C	C	A	A					
Approach Delay (s)		0.0			23.9			3.7			0.0		
Approach LOS		A			C			A			A		
Intersection Summary													
HCM 2000 Control Delay			11.5		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.58										
Actuated Cycle Length (s)			85.0		Sum of lost time (s)						9.5		
Intersection Capacity Utilization			61.4%		ICU Level of Service						B		
Analysis Period (min)			15										
c	Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	163	60	13	124	105	30	146	17	93	100	20
Peak Hour 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
Hourly flow rate (vph)	22	163	60	13	124	105	30	146	17	93	100	20
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	245	242	193	143	70							
Volume Left (vph)	22	13	30	93	0							
Volume Right (vph)	60	105	17	0	20							
Hadj (s)	-0.09	-0.22	0.01	0.36	-0.17							
Departure Headway (s)	5.4	5.3	5.8	6.5	6.0							
Degree Utilization, x	0.37	0.36	0.31	0.26	0.12							
Capacity (veh/h)	617	629	565	510	552							
Control Delay (s)	11.5	11.2	11.3	10.6	8.6							
Approach Delay (s)	11.5	11.2	11.3	9.9								
Approach LOS	B	B	B	A								
Intersection Summary												
Delay			11.0									
Level of Service			B									
Intersection Capacity Utilization			46.4%	ICU Level of Service	A							
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	31	16	17	26	64	18	295	49	53	278	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	40	31	16	17	26	64	18	295	49	53	278	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												288
pX, platoon unblocked	1.00	1.00	1.00	1.00	1.00		1.00					
vC, conflicting volume	661	780	156	632	772	172	311			344		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	655	775	149	626	767	172	304			344		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	90	98	95	92	92	99			96		
cM capacity (veh/h)	290	308	869	319	311	842	1250			1212		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	87	107	166	196	192	172						
Volume Left	40	17	18	0	53	0						
Volume Right	16	64	0	49	0	33						
cSH	338	502	1250	1700	1212	1700						
Volume to Capacity	0.26	0.21	0.01	0.12	0.04	0.10						
Queue Length 95th (ft)	25	20	1	0	3	0						
Control Delay (s)	19.3	14.1	1.0	0.0	2.5	0.0						
Lane LOS	C	B	A		A							
Approach Delay (s)	19.3	14.1	0.4		1.3							
Approach LOS	C	B										
Intersection Summary												
Average Delay			4.2									
Intersection Capacity Utilization			41.7%	ICU Level of Service	A							
Analysis Period (min)			15									























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	135	28	10	120	116	45	299	12	43	252	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.97			0.94			0.99			0.97	
Flt Protected	0.95	1.00			1.00			0.99			0.99	
Satd. Flow (prot)	1770	1815			1741			3499			3426	
Flt Permitted	0.58	1.00			0.99			0.88			0.88	
Satd. Flow (perm)	1089	1815			1725			3085			3036	
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
Adj. Flow (vph)	106	135	28	10	120	116	45	299	12	43	252	62
RTOR Reduction (vph)	0	10	0	0	43	0	0	3	0	0	24	0
Lane Group Flow (vph)	106	153	0	0	203	0	0	353	0	0	333	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	464	774			736			1398			1376	
v/s Ratio Prot		0.08										
v/s Ratio Perm	0.10				c0.12			c0.11			0.11	
v/c Ratio	0.23	0.20			0.28			0.25			0.24	
Uniform Delay, d1	13.7	13.5			14.0			12.7			12.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.1	0.6			0.9			0.4			0.4	
Delay (s)	14.8	14.0			14.9			13.1			13.0	
Level of Service	B	B			B			B			B	
Approach Delay (s)		14.3			14.9			13.1			13.0	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.7					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			57.9%					ICU Level of Service		B		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 			
Volume (vph)	1007	296	73	0	0	0	0	318	382	591	334	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00		
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1610	3287	1583					3539	1583	3433	1863		
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1610	3287	1583					3539	1583	3433	1863		
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	
Adj. Flow (vph)	1007	296	73	0	0	0	0	318	382	591	334	0	
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	159	0	0	0	
Lane Group Flow (vph)	503	800	25	0	0	0	0	318	223	591	334	0	
Turn Type	Split	NA	Prot					NA	Prot	Prot	NA		
Protected Phases	4	4	4					2	2	1	6		
Permitted Phases													
Actuated Green, G (s)	31.1	31.1	31.1					25.9	25.9	19.5	48.9		
Effective Green, g (s)	31.1	31.1	31.1					25.9	25.9	19.5	48.9		
Actuated g/C Ratio	0.35	0.35	0.35					0.29	0.29	0.22	0.54		
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	556	1135	547					1018	455	743	1012		
v/s Ratio Prot	c0.31	0.24	0.02					0.09	c0.14	c0.17	0.18		
v/s Ratio Perm													
v/c Ratio	0.90	0.87dl	0.05					0.31	0.49	0.80	0.33		
Uniform Delay, d1	28.0	25.5	19.6					25.1	26.6	33.4	11.4		
Progression Factor	0.86	0.86	0.73					1.00	1.00	0.83	1.08		
Incremental Delay, d2	18.1	2.0	0.0					0.8	3.7	5.4	0.2		
Delay (s)	42.2	23.9	14.3					25.9	30.3	33.0	12.6		
Level of Service	D	C	B					C	C	C	B		
Approach Delay (s)		30.1			0.0			28.3			25.6		
Approach LOS		C			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			28.3									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			111.8%									ICU Level of Service	H
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	248	139	617	76	285	0	0	752	34	
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		
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91		
Frt				1.00	1.00	0.85	1.00	1.00			0.99		
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1593	3185	1425	1593	3185			4547		
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (perm)				1593	3185	1425	1593	3185			4547		
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	
Adj. Flow (vph)	0	0	0	248	139	617	76	285	0	0	752	34	
RTOR Reduction (vph)	0	0	0	0	0	338	0	0	0	0	4	0	
Lane Group Flow (vph)	0	0	0	248	139	279	76	285	0	0	782	0	
Turn Type				Split	NA	Prot	Prot	NA			NA		
Protected Phases				8	8	8	5	2			6		
Permitted Phases													
Actuated Green, G (s)				30.0	30.0	30.0	15.2	52.0			32.8		
Effective Green, g (s)				30.0	30.0	30.0	15.2	52.0			32.8		
Actuated g/C Ratio				0.33	0.33	0.33	0.17	0.58			0.36		
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0		
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0		
Lane Grp Cap (vph)				531	1061	475	269	1840			1657		
v/s Ratio Prot				0.16	0.04	c0.20	c0.05	0.09			c0.17		
v/s Ratio Perm													
v/c Ratio				0.47	0.13	0.59	0.28	0.15			0.47		
Uniform Delay, d1				23.7	20.9	24.9	32.6	8.8			22.0		
Progression Factor				1.00	1.00	1.00	0.73	0.98			1.00		
Incremental Delay, d2				0.7	0.1	1.9	0.4	0.1			1.0		
Delay (s)				24.3	21.0	26.7	24.3	8.7			22.9		
Level of Service				C	C	C	C	A			C		
Approach Delay (s)		0.0			25.3			12.0			22.9		
Approach LOS		A			C			B			C		
Intersection Summary													
HCM 2000 Control Delay			22.2	HCM 2000 Level of Service						C			
HCM 2000 Volume to Capacity ratio			0.48										
Actuated Cycle Length (s)			90.0	Sum of lost time (s)					12.0				
Intersection Capacity Utilization			111.8%	ICU Level of Service						H			
Analysis Period (min)			15										
c	Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	486	191	0	0	0	0	482	77	99	726	0
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	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frt		0.96						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5518						3119		1593	3185	
Flt Permitted		0.99						1.00		0.38	1.00	
Satd. Flow (perm)		5518						3119		634	3185	
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
Adj. Flow (vph)	119	486	191	0	0	0	0	482	77	99	726	0
RTOR Reduction (vph)	0	93	0	0	0	0	0	21	0	0	0	0
Lane Group Flow (vph)	0	703	0	0	0	0	0	538	0	99	726	0
Turn Type	Split	NA						NA		pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)		23.0						21.0		29.0	29.0	
Effective Green, g (s)		23.0						21.0		29.0	29.0	
Actuated g/C Ratio		0.38						0.35		0.48	0.48	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Vehicle Extension (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2115						1091		370	1539	
v/s Ratio Prot		c0.13						0.17		0.02	c0.23	
v/s Ratio Perm										0.11		
v/c Ratio		0.33						0.49		0.27	0.47	
Uniform Delay, d1		13.1						15.3		11.5	10.4	
Progression Factor		1.00						1.00		0.77	0.79	
Incremental Delay, d2		0.1						1.6		0.4	0.9	
Delay (s)		13.2						16.9		9.2	9.2	
Level of Service		B						B		A	A	
Approach Delay (s)		13.2			0.0			16.9			9.2	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.6					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		12.0		
Intersection Capacity Utilization			55.0%					ICU Level of Service			B	
Analysis Period (min)			15									
c	Critical Lane Group											





















HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					  			 			  		
Volume (vph)	0	0	0	161	511	94	132	474	0	0	613	83	
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		
Lane Util. Factor					0.91		1.00	0.95			0.91		
Flt					0.98		1.00	1.00			0.98		
Flt Protected					0.99		0.95	1.00			1.00		
Satd. Flow (prot)					4446		1593	3185			4495		
Flt Permitted					0.99		0.33	1.00			1.00		
Satd. Flow (perm)					4446		546	3185			4495		
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	
Adj. Flow (vph)	0	0	0	161	511	94	132	474	0	0	613	83	
RTOR Reduction (vph)	0	0	0	0	30	0	0	0	0	0	29	0	
Lane Group Flow (vph)	0	0	0	0	736	0	132	474	0	0	667	0	
Turn Type				Split	NA		pm+pt	NA			NA		
Protected Phases				8	8		5	2			6		
Permitted Phases							2						
Actuated Green, G (s)					26.0		26.0	26.0			18.0		
Effective Green, g (s)					26.0		26.0	26.0			18.0		
Actuated g/C Ratio					0.43		0.43	0.43			0.30		
Clearance Time (s)					4.0		4.0	4.0			4.0		
Lane Grp Cap (vph)					1926		306	1380			1348		
v/s Ratio Prot					c0.17		0.03	c0.15			c0.15		
v/s Ratio Perm							0.16						
v/c Ratio					0.38		0.43	0.34			0.50		
Uniform Delay, d1					11.5		14.4	11.3			17.3		
Progression Factor					1.00		0.43	0.49			1.50		
Incremental Delay, d2					0.6		4.0	0.6			1.0		
Delay (s)					12.1		10.2	6.1			26.9		
Level of Service					B		B	A			C		
Approach Delay (s)		0.0			12.1			7.0			26.9		
Approach LOS		A			B			A			C		
Intersection Summary													
HCM 2000 Control Delay			15.6		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.44										
Actuated Cycle Length (s)			60.0		Sum of lost time (s)						12.0		
Intersection Capacity Utilization			55.0%		ICU Level of Service						B		
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	6	319	109	3	379	114	2	486	32	0	788	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frt		0.96			0.97			0.99			0.98	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3063			3075			3155			3131	
Flt Permitted		0.95			0.95			0.95			1.00	
Satd. Flow (perm)		2905			2930			3005			3131	
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
Adj. Flow (vph)	6	319	109	3	379	114	2	486	32	0	788	100
RTOR Reduction (vph)	0	55	0	0	46	0	0	8	0	0	16	0
Lane Group Flow (vph)	0	379	0	0	450	0	0	512	0	0	872	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		23.5			23.5			25.5			25.5	
Effective Green, g (s)		23.5			23.5			25.5			25.5	
Actuated g/C Ratio		0.39			0.39			0.42			0.42	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Lane Grp Cap (vph)		1137			1147			1277			1330	
v/s Ratio Prot											c0.28	
v/s Ratio Perm		0.13			c0.15			0.17				
v/c Ratio		0.33			0.39			0.40			0.66	
Uniform Delay, d1		12.8			13.1			12.0			13.7	
Progression Factor		1.00			1.00			1.40			1.00	
Incremental Delay, d2		0.8			1.0			0.9			2.5	
Delay (s)		13.6			14.1			17.6			16.3	
Level of Service		B			B			B			B	
Approach Delay (s)		13.6			14.1			17.6			16.3	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.6					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		11.0		
Intersection Capacity Utilization			55.5%					ICU Level of Service			B	
Analysis Period (min)			15									
c	Critical Lane Group											

















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	87	39	18	83	0	0	0	0	10	32	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	87	39	18	83	0	0	0	0	10	32	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	83			126			262	226	106	226	245	83
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			126			262	226	106	226	245	83
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	95	98
cM capacity (veh/h)	1514			1460			644	665	948	723	649	976
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	126	101	26	37								
Volume Left	0	18	10	0								
Volume Right	39	0	0	21								
cSH	1700	1460	676	802								
Volume to Capacity	0.07	0.01	0.04	0.05								
Queue Length 95th (ft)	0	1	3	4								
Control Delay (s)	0.0	1.4	10.5	9.7								
Lane LOS		A	B	A								
Approach Delay (s)	0.0	1.4	10.1									
Approach LOS			B									
Intersection Summary												
Average Delay			2.7									
Intersection Capacity Utilization			25.7%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	210	12	27	223	0	0	0	0	14	21	86
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	210	12	27	223	0	0	0	0	14	21	86
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	0.99
vC, conflicting volume	223			222			590	493	216	493	499	223
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	223			209			580	483	203	483	489	223
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	97	95	89
cM capacity (veh/h)	1346			1348			358	469	829	482	465	817
Direction, Lane #												
	EB 1	WB 1	SB 1	SB 2								
Volume Total	222	250	24	96								
Volume Left	0	27	14	0								
Volume Right	12	0	0	86								
cSH	1700	1348	474	755								
Volume to Capacity	0.13	0.02	0.05	0.13								
Queue Length 95th (ft)	0	2	4	11								
Control Delay (s)	0.0	1.0	13.0	10.5								
Lane LOS		A	B	B								
Approach Delay (s)	0.0	1.0	11.0									
Approach LOS			B									
Intersection Summary												
Average Delay			2.7									
Intersection Capacity Utilization			38.8%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis





















17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	112	242	192	111	125	76
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	112	242	192	111	125	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		362	224	466	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		362	224	466	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	93		54	82	73	93
cM capacity (veh/h)	1623		414	628	460	1085
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total	112	242	303	125	76	
Volume Left	112	0	192	0	0	
Volume Right	0	242	0	0	76	
cSH	1623	1700	473	460	1085	
Volume to Capacity	0.07	0.14	0.64	0.27	0.07	
Queue Length 95th (ft)	6	0	111	27	6	
Control Delay (s)	7.4	0.0	25.2	15.7	8.6	
Lane LOS	A		D	C	A	
Approach Delay (s)	2.3		25.2	13.0		
Approach LOS			D	B		
Intersection Summary						
Average Delay			12.9			
Intersection Capacity Utilization			39.3%	ICU Level of Service	A	
Analysis Period (min)			15			

















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  	 			
Volume (vph)	86	394	0	0	0	0	0	510	908	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0	5.0			
Lane Util. Factor		0.91						0.91	0.88			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4536						4577	2508			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4536						4577	2508			
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
Adj. Flow (vph)	86	394	0	0	0	0	0	510	908	0	0	0
RTOR Reduction (vph)	0	44	0	0	0	0	0	0	424	0	0	0
Lane Group Flow (vph)	0	436	0	0	0	0	0	510	484	0	0	0
Turn Type	Perm	NA						NA	custom			
Protected Phases		2						1				
Permitted Phases	2								5			
Actuated Green, G (s)		29.0						21.0	22.0			
Effective Green, g (s)		29.0						21.0	22.0			
Actuated g/C Ratio		0.48						0.35	0.37			
Clearance Time (s)		5.0						5.0	5.0			
Vehicle Extension (s)		3.0						3.0	3.0			
Lane Grp Cap (vph)		2192						1601	919			
v/s Ratio Prot								0.11				
v/s Ratio Perm		0.10							c0.19			
v/c Ratio		0.20						0.32	0.53			
Uniform Delay, d1		8.9						14.3	14.9			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.2						0.5	2.2			
Delay (s)		9.1						14.8	17.1			
Level of Service		A						B	B			
Approach Delay (s)		9.1			0.0			16.2			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			14.4					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			81.8%					ICU Level of Service		D		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

19: Jackson Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	232	484	380	0	0	0	0	505	28	106	122	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5						5.5		5.5	5.5	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frt		0.95						0.99		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		4770						1850		1770	1863	
Flt Permitted		0.99						1.00		0.25	1.00	
Satd. Flow (perm)		4770						1850		466	1863	
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
Adj. Flow (vph)	232	484	380	0	0	0	0	505	28	106	122	0
RTOR Reduction (vph)	0	127	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	969	0	0	0	0	0	531	0	106	122	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		34.5						29.5		29.5	29.5	
Effective Green, g (s)		34.5						29.5		29.5	29.5	
Actuated g/C Ratio		0.46						0.39		0.39	0.39	
Clearance Time (s)		5.5						5.5		5.5	5.5	
Lane Grp Cap (vph)		2194						727		183	732	
v/s Ratio Prot								c0.29			0.07	
v/s Ratio Perm		0.20								0.23		
v/c Ratio		0.44						0.73		0.58	0.17	
Uniform Delay, d1		13.7						19.4		17.9	14.8	
Progression Factor		1.00						1.00		0.68	0.70	
Incremental Delay, d2		0.6						6.4		12.6	0.5	
Delay (s)		14.4						25.7		24.7	10.8	
Level of Service		B						C		C	B	
Approach Delay (s)		14.4			0.0			25.7			17.3	
Approach LOS		B			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			18.0					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		11.0		
Intersection Capacity Utilization			90.1%					ICU Level of Service		E		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	9	322	44	398	368	0	0	216	425	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			5.5	4.0	
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425	
Flt Permitted				0.95	1.00	1.00	0.62	1.00			1.00	1.00	
Satd. Flow (perm)				1593	1676	1425	1045	1676			1676	1425	
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	
Adj. Flow (vph)	0	0	0	9	322	44	398	368	0	0	216	425	
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	9	322	11	398	368	0	0	216	425	
Turn Type				Split	NA	Perm	Perm	NA			NA	Free	
Protected Phases				8	8			2			6		
Permitted Phases						8	2					Free	
Actuated Green, G (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Effective Green, g (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Actuated g/C Ratio				0.26	0.26	0.26	0.59	0.59			0.59	1.00	
Clearance Time (s)				5.5	5.5	5.5	5.5	5.5			5.5		
Lane Grp Cap (vph)				414	435	370	620	994			994	1425	
v/s Ratio Prot				0.01	c0.19			0.22			0.13		
v/s Ratio Perm						0.01	c0.38					0.30	
v/c Ratio				0.02	0.74	0.03	0.64	0.37			0.22	0.30	
Uniform Delay, d1				20.7	25.4	20.7	10.0	7.9			7.1	0.0	
Progression Factor				1.00	1.00	1.00	0.57	0.60			1.00	1.00	
Incremental Delay, d2				0.1	10.8	0.2	4.0	0.8			0.5	0.5	
Delay (s)				20.7	36.2	20.9	9.7	5.6			7.6	0.5	
Level of Service				C	D	C	A	A			A	A	
Approach Delay (s)		0.0			34.0			7.8			2.9		
Approach LOS		A			C			A			A		
Intersection Summary													
HCM 2000 Control Delay			11.6		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.67										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					11.0			
Intersection Capacity Utilization			90.1%		ICU Level of Service					E			
Analysis Period (min)			15										
c Critical Lane Group													






















HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 				
Volume (vph)	32	839	415	0	0	0	0	234	108	30	281	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.98	0.85					0.96			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		4237	1226					1605			1668	
Flt Permitted		1.00	1.00					1.00			0.95	
Satd. Flow (perm)		4237	1226					1605			1592	
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
Adj. Flow (vph)	32	839	415	0	0	0	0	234	108	30	281	0
RTOR Reduction (vph)	0	29	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	0	967	290	0	0	0	0	314	0	0	311	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		27.0	60.0					24.0			24.0	
Effective Green, g (s)		27.0	60.0					24.0			24.0	
Actuated g/C Ratio		0.45	1.00					0.40			0.40	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1906	1226					642			636	
v/s Ratio Prot		c0.23						c0.20				
v/s Ratio Perm			0.24								0.20	
v/c Ratio		0.51	0.24					0.49			0.49	
Uniform Delay, d1		11.8	0.0					13.4			13.4	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		1.0	0.5					2.7			2.7	
Delay (s)		12.7	0.5					16.1			16.1	
Level of Service		B	A					B			B	
Approach Delay (s)		10.0			0.0			16.1			16.1	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.0					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			72.3%					ICU Level of Service		C		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Volume (vph)	0	539	26	0	0	0	0	0	0	747	132	0
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	
Lane Util. Factor		0.91								0.91	0.91	
Frt		0.99								1.00	1.00	
Flt Protected		1.00								0.95	0.96	
Satd. Flow (prot)		5050								1610	3269	
Flt Permitted		1.00								0.95	0.96	
Satd. Flow (perm)		5050								1610	3269	
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
Adj. Flow (vph)	0	539	26	0	0	0	0	0	0	747	132	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	74	74	0
Lane Group Flow (vph)	0	554	0	0	0	0	0	0	0	299	432	0
Turn Type		NA								Perm	NA	
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		16.0								22.0	22.0	
Effective Green, g (s)		16.0								22.0	22.0	
Actuated g/C Ratio		0.35								0.48	0.48	
Clearance Time (s)		4.0								4.0	4.0	
Lane Grp Cap (vph)		1756								770	1563	
v/s Ratio Prot		c0.11										
v/s Ratio Perm										c0.19	0.13	
v/c Ratio		0.32								0.39	0.28	
Uniform Delay, d1		11.0								7.7	7.2	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		0.5								1.5	0.4	
Delay (s)		11.5								9.2	7.7	
Level of Service		B								A	A	
Approach Delay (s)		11.5			0.0			0.0			8.3	
Approach LOS		B			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.5								HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.36									
Actuated Cycle Length (s)			46.0								Sum of lost time (s)	8.0
Intersection Capacity Utilization			34.9%								ICU Level of Service	A
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

23: Madison Street & 6th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	
Volume (vph)	0	0	0	15	173	0	0	0	0	0	915	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frt					1.00						0.97	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					4559						4461	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					4559						4461	
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
Adj. Flow (vph)	0	0	0	15	173	0	0	0	0	0	915	185
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	68	0
Lane Group Flow (vph)	0	0	0	0	172	0	0	0	0	0	1032	0
Turn Type				Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases												
Actuated Green, G (s)					15.0						22.0	
Effective Green, g (s)					15.0						22.0	
Actuated g/C Ratio					0.33						0.49	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1519						2180	
v/s Ratio Prot					c0.04						c0.23	
v/s Ratio Perm												
v/c Ratio					0.11						0.47	
Uniform Delay, d1					10.4						7.6	
Progression Factor					0.90						1.00	
Incremental Delay, d2					0.1						0.7	
Delay (s)					9.5						8.4	
Level of Service					A						A	
Approach Delay (s)		0.0			9.5			0.0			8.4	
Approach LOS		A			A			A			A	















Intersection Summary

HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		




















c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	777	254	0	0	0	0	0	0	242	729	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0									4.0		
Lane Util. Factor		0.86									0.91		
Frt		0.96									1.00		
Flt Protected		1.00									0.99		
Satd. Flow (prot)		5554									4520		
Flt Permitted		1.00									0.99		
Satd. Flow (perm)		5554									4520		
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	
Adj. Flow (vph)	0	777	254	0	0	0	0	0	0	242	729	0	
RTOR Reduction (vph)	0	83	0	0	0	0	0	0	0	0	44	0	
Lane Group Flow (vph)	0	948	0	0	0	0	0	0	0	0	927	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		24.0									28.0		
Effective Green, g (s)		24.0									28.0		
Actuated g/C Ratio		0.40									0.47		
Clearance Time (s)		4.0									4.0		
Vehicle Extension (s)		3.0									3.0		
Lane Grp Cap (vph)		2221									2109		
v/s Ratio Prot		c0.17											
v/s Ratio Perm											0.21		
v/c Ratio		0.43									0.44		
Uniform Delay, d1		13.0									10.7		
Progression Factor		0.33									1.00		
Incremental Delay, d2		0.5									0.7		
Delay (s)		4.9									11.4		
Level of Service		A									B		
Approach Delay (s)		4.9			0.0			0.0			11.4		
Approach LOS		A			A			A			B		
Intersection Summary													
HCM 2000 Control Delay			8.1									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.43										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			45.0%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Volume (veh/h)	235	0	113	5	0	1	132	241	0	0	228	198
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	235	0	113	5	0	1	132	241	0	0	228	198
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											563	
pX, platoon unblocked												
vC, conflicting volume	712	832	213	732	931	120	426			241		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	712	832	213	732	931	120	426			241		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	19	100	86	98	100	100	88			100		
cM capacity (veh/h)	290	268	792	241	234	908	1130			1323		
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	235	113	132	120	120	152	274					
Volume Left	235	0	132	0	0	0	0					
Volume Right	0	113	0	0	0	0	198					
cSH	290	792	1130	1700	1700	1700	1700					
Volume to Capacity	0.81	0.14	0.12	0.07	0.07	0.09	0.16					
Queue Length 95th (ft)	164	12	10	0	0	0	0					
Control Delay (s)	54.2	10.3	8.6	0.0	0.0	0.0	0.0					
Lane LOS	F	B	A									
Approach Delay (s)	39.9		3.0			0.0						
Approach LOS	E											
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			Err%	ICU Level of Service	H							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street






















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	141	77	49	466	314	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1718		1770	1863	1863	1583
Flt Permitted	0.97		0.57	1.00	1.00	1.00
Satd. Flow (perm)	1718		1061	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	141	77	49	466	314	53
RTOR Reduction (vph)	39	0	0	0	0	18
Lane Group Flow (vph)	179	0	49	466	314	35
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	10.7		35.7	35.7	35.7	35.7
Effective Green, g (s)	10.7		35.7	35.7	35.7	35.7
Actuated g/C Ratio	0.20		0.66	0.66	0.66	0.66
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	337		696	1222	1222	1038
v/s Ratio Prot	c0.10			c0.25	0.17	
v/s Ratio Perm			0.05			0.02
v/c Ratio	0.53		0.07	0.38	0.26	0.03
Uniform Delay, d1	19.6		3.4	4.3	3.9	3.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6		0.2	0.9	0.5	0.1
Delay (s)	21.2		3.6	5.2	4.4	3.3
Level of Service	C		A	A	A	A
Approach Delay (s)	21.2			5.0	4.2	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			
















HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Volume (vph)	207	854	118	0	0	0	0	464	269	4	241	0
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	
Lane Util. Factor		0.91						0.95			1.00	
Frt		0.98						0.94			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		4965						3344			1861	
Flt Permitted		0.99						1.00			0.99	
Satd. Flow (perm)		4965						3344			1840	
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
Adj. Flow (vph)	207	854	118	0	0	0	0	464	269	4	241	0
RTOR Reduction (vph)	0	30	0	0	0	0	0	72	0	0	0	0
Lane Group Flow (vph)	0	1149	0	0	0	0	0	661	0	0	245	0
Turn Type	Split	NA						NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases										6		
Actuated Green, G (s)		22.0						15.0			15.0	
Effective Green, g (s)		22.0						15.0			15.0	
Actuated g/C Ratio		0.49						0.33			0.33	
Clearance Time (s)		4.0						4.0			4.0	
Lane Grp Cap (vph)		2427						1114			613	
v/s Ratio Prot		c0.23						c0.20				
v/s Ratio Perm											0.13	
v/c Ratio		0.47						0.59			0.40	
Uniform Delay, d1		7.6						12.5			11.5	
Progression Factor		1.00						1.00			1.27	
Incremental Delay, d2		0.7						2.3			1.9	
Delay (s)		8.3						14.8			16.6	
Level of Service		A						B			B	
Approach Delay (s)		8.3			0.0			14.8			16.6	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			11.5					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			45.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			51.4%					ICU Level of Service		A		
Analysis Period (min)			15									
c	Critical Lane Group											















HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	217	80	478	134	550	0	0	0	0
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				
Lane Util. Factor					0.91	0.91		0.95				
Frt					0.93	0.85		1.00				
Flt Protected					0.98	1.00		0.99				
Satd. Flow (prot)					2794	1297		3154				
Flt Permitted					0.98	1.00		0.99				
Satd. Flow (perm)					2794	1297		3154				
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
Adj. Flow (vph)	0	0	0	217	80	478	134	550	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	63	63	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	463	186	0	684	0	0	0	0
Turn Type				Split	NA	Perm	Split	NA				
Protected Phases				8	8		2	2				
Permitted Phases						8						
Actuated Green, G (s)					22.0	22.0		15.0				
Effective Green, g (s)					22.0	22.0		15.0				
Actuated g/C Ratio					0.49	0.49		0.33				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1365	634		1051				
v/s Ratio Prot					c0.17			c0.22				
v/s Ratio Perm						0.14						
v/c Ratio					0.34	0.29		0.65				
Uniform Delay, d1					7.0	6.9		12.8				
Progression Factor					1.00	1.00		0.72				
Incremental Delay, d2					0.7	1.2		2.6				
Delay (s)					7.7	8.0		11.8				
Level of Service					A	A		B				
Approach Delay (s)		0.0			7.8			11.8			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			9.7		HCM 2000 Level of Service					A		
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			45.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			49.8%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												


















HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	758	0	0	0	0	0	908	176	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.98				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5728						4465				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5728						4465				
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
Adj. Flow (vph)	118	758	0	0	0	0	0	908	176	0	0	0
RTOR Reduction (vph)	0	29	0	0	0	0	0	48	0	0	0	0
Lane Group Flow (vph)	0	847	0	0	0	0	0	1036	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		27.0						24.0				
Effective Green, g (s)		27.0						24.0				
Actuated g/C Ratio		0.45						0.40				
Clearance Time (s)		4.5						4.5				
Lane Grp Cap (vph)		2577						1786				
v/s Ratio Prot								c0.23				
v/s Ratio Perm		0.15										
v/c Ratio		0.33						0.58				
Uniform Delay, d1		10.7						14.1				
Progression Factor		0.69						1.00				
Incremental Delay, d2		0.3						1.4				
Delay (s)		7.7						15.4				
Level of Service		A						B				
Approach Delay (s)		7.7			0.0			15.4			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.0					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)			9.0	
Intersection Capacity Utilization			70.9%					ICU Level of Service			C	
Analysis Period (min)			15									
c	Critical Lane Group											




























HCM Unsignalized Intersection Capacity Analysis

30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	44	332	5	1	252	309	9	1	3	340	2	46
Peak Hour 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
Hourly flow rate (vph)	44	332	5	1	252	309	9	1	3	340	2	46
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	381	253	309	13	388							
Volume Left (vph)	44	1	0	9	340							
Volume Right (vph)	5	0	309	3	46							
Hadj (s)	0.05	0.04	-0.67	0.03	0.14							
Departure Headway (s)	6.3	6.6	5.9	7.6	6.4							
Degree Utilization, x	0.67	0.47	0.51	0.03	0.69							
Capacity (veh/h)	381	520	588	378	388							
Control Delay (s)	20.9	14.1	13.7	10.8	22.7							
Approach Delay (s)	20.9	13.9		10.8	22.7							
Approach LOS	C	B		B	C							
Intersection Summary												
Delay			18.4									
Level of Service			C									
Intersection Capacity Utilization			70.7%	ICU Level of Service	C							
Analysis Period (min)			15									





























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	
Volume (vph)	179	160	44	57	200	39	31	493	45	87	787	161
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
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3453		1770	3495		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3453		1770	3495		1770	3539	1583
Peak-hour factor, 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)	195	174	48	62	217	42	34	536	49	95	855	175
RTOR Reduction (vph)	0	0	37	0	17	0	0	6	0	0	0	152
Lane Group Flow (vph)	195	174	11	62	242	0	34	579	0	95	855	23
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									
Actuated Green, G (s)	9.3	16.3	16.3	5.0	12.0		2.9	26.1		7.4	30.6	9.3
Effective Green, g (s)	9.3	16.3	16.3	5.0	12.0		2.9	26.1		7.4	30.6	9.3
Actuated g/C Ratio	0.13	0.23	0.23	0.07	0.17		0.04	0.37		0.10	0.43	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	450	814	364	125	585		72	1288		185	1529	207
v/s Ratio Prot	c0.06	0.05		0.04	c0.07		0.02	0.17		c0.05	c0.24	0.01
v/s Ratio Perm			0.01									
v/c Ratio	0.43	0.21	0.03	0.50	0.41		0.47	0.45		0.51	0.56	0.11
Uniform Delay, d1	28.3	22.1	21.1	31.7	26.3		33.2	16.9		30.0	15.1	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.0	3.1	0.5		4.8	1.1		2.4	1.5	0.2
Delay (s)	29.0	22.2	21.2	34.8	26.7		38.0	18.1		32.4	16.5	27.3
Level of Service	C	C	C	C	C		D	B		C	B	C
Approach Delay (s)		25.3			28.3			19.1			19.6	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			21.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			70.8			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			50.3%			ICU Level of Service				A		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue


















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	 		 	 	
Volume (vph)	101	141	99	50	134	95	84	553	38	125	1101	115
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
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3320		1770	3320		3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3320		1770	3320		3433	3539	1583	3433	3539	1583
Peak-hour factor, 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)	110	153	108	54	146	103	91	601	41	136	1197	125
RTOR Reduction (vph)	0	87	0	0	88	0	0	0	25	0	0	61
Lane Group Flow (vph)	110	174	0	54	161	0	91	601	16	136	1197	64
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.6	12.4		4.6	9.4		5.6	25.5	25.5	6.3	26.2	26.2
Effective Green, g (s)	7.6	12.4		4.6	9.4		5.6	25.5	25.5	6.3	26.2	26.2
Actuated g/C Ratio	0.12	0.19		0.07	0.15		0.09	0.39	0.39	0.10	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	635		125	481		296	1392	622	333	1430	640
v/s Ratio Prot	c0.06	c0.05		0.03	0.05		0.03	0.17		c0.04	c0.34	
v/s Ratio Perm									0.01			0.04
v/c Ratio	0.53	0.27		0.43	0.33		0.31	0.43	0.03	0.41	0.84	0.10
Uniform Delay, d1	26.9	22.4		28.8	24.9		27.8	14.4	12.0	27.5	17.4	12.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.2		2.4	0.4		0.6	1.0	0.1	0.8	6.0	0.3
Delay (s)	29.5	22.6		31.2	25.3		28.4	15.3	12.1	28.3	23.4	12.3
Level of Service	C	C		C	C		C	B	B	C	C	B
Approach Delay (s)		24.6			26.4			16.8			22.9	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			21.9				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			64.8			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			59.4%			ICU Level of Service			B			
Analysis Period (min)			15									
c	Critical Lane Group											

Level Of Service Computation Report

Existing plus Project (Maximum Commercial Scenario) Conditions
AM Peak Hour

























HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	74	27	17	201	41	43	21	5	31	90	93
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	24	74	27	17	201	41	43	21	5	31	90	93
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	242			101			408	412	50	356	404	121
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	242			101			408	412	50	356	404	121
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			89	96	100	94	83	90
cM capacity (veh/h)	1322			1489			401	513	1007	542	518	908
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	61	64	118	142	69	31	60	123				
Volume Left	24	0	17	0	43	31	0	0				
Volume Right	0	27	0	41	5	0	0	93				
cSH	1322	1700	1489	1700	451	542	518	767				
Volume to Capacity	0.02	0.04	0.01	0.08	0.15	0.06	0.12	0.16				
Queue Length 95th (ft)	1	0	1	0	13	5	10	14				
Control Delay (s)	3.1	0.0	1.2	0.0	14.4	12.1	12.9	10.6				
Lane LOS	A		A		B	B	B	B				
Approach Delay (s)	1.5		0.5		14.4	11.4						
Approach LOS					B	B						
Intersection Summary												
Average Delay			5.7									
Intersection Capacity Utilization			33.6%		ICU Level of Service				A			
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  						  		  	  		
Volume (vph)	10	559	36	0	0	0	0	78	19	52	197	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						4.5		4.5	4.5		
Lane Util. Factor		0.91						0.95		1.00	0.91		
Frt		0.99						0.97		1.00	1.00		
Flt Protected		1.00						1.00		0.95	1.00		
Satd. Flow (prot)		5036						3435		1770	5085		
Flt Permitted		1.00						1.00		0.69	1.00		
Satd. Flow (perm)		5036						3435		1287	5085		
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	
Adj. Flow (vph)	10	559	36	0	0	0	0	78	19	52	197	0	
RTOR Reduction (vph)	0	9	0	0	0	0	0	14	0	0	0	0	
Lane Group Flow (vph)	0	596	0	0	0	0	0	83	0	52	197	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		45.5						19.5		19.5	19.5		
Effective Green, g (s)		45.5						19.5		19.5	19.5		
Actuated g/C Ratio		0.61						0.26		0.26	0.26		
Clearance Time (s)		5.5						4.5		4.5	4.5		
Vehicle Extension (s)		3.0						3.0		3.0	3.0		
Lane Grp Cap (vph)		3055						893		334	1322		
v/s Ratio Prot								0.02			0.04		
v/s Ratio Perm		0.12								c0.04			
v/c Ratio		0.19						0.09		0.16	0.15		
Uniform Delay, d1		6.6						21.0		21.4	21.4		
Progression Factor		1.00						1.02		0.60	0.61		
Incremental Delay, d2		0.1						0.2		1.0	0.2		
Delay (s)		6.7						21.7		13.8	13.4		
Level of Service		A						C		B	B		
Approach Delay (s)		6.7			0.0			21.7			13.5		
Approach LOS		A			A			C			B		
Intersection Summary													
HCM 2000 Control Delay			10.0									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.18										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			30.6%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	0	0	0	103	270	258	9	22	69	0	0	142	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95	
Frt					1.00	0.85		1.00	1.00			1.00	
Flt Protected					0.99	1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3491	1583		1770	1863			3539	
Flt Permitted					0.99	1.00		0.66	1.00			1.00	
Satd. Flow (perm)					3491	1583		1233	1863			3539	
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	
Adj. Flow (vph)	0	0	0	103	270	258	9	22	69	0	0	142	
RTOR Reduction (vph)	0	0	0	0	0	207	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	373	51	0	31	69	0	0	142	
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA	
Protected Phases					8				2			6	
Permitted Phases				8		8	2	2					
Actuated Green, G (s)					14.8	14.8		51.2	51.2			51.2	
Effective Green, g (s)					14.8	14.8		51.2	51.2			51.2	
Actuated g/C Ratio					0.20	0.20		0.68	0.68			0.68	
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5	
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					688	312		841	1271			2415	
v/s Ratio Prot									0.04			c0.04	
v/s Ratio Perm					0.11	0.03		0.03					
v/c Ratio					0.54	0.16		0.04	0.05			0.06	
Uniform Delay, d1					27.1	25.0		3.9	3.9			3.9	
Progression Factor					0.83	0.44		0.55	0.55			0.87	
Incremental Delay, d2					0.9	0.2		0.1	0.1			0.0	
Delay (s)					23.2	11.1		2.2	2.2			3.5	
Level of Service					C	B		A	A			A	
Approach Delay (s)		0.0			18.3				2.2			3.5	
Approach LOS		A			B				A			A	
Intersection Summary													
HCM 2000 Control Delay			13.5		HCM 2000 Level of Service					B			
HCM 2000 Volume to Capacity ratio			0.17										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					9.0			
Intersection Capacity Utilization			30.6%		ICU Level of Service					A			
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis






















3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	45
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	45
RTOR Reduction (vph)	14
Lane Group Flow (vph)	31
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	51.2
Effective Green, g (s)	51.2
Actuated g/C Ratio	0.68
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1080
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.03
Uniform Delay, d1	3.9
Progression Factor	0.97
Incremental Delay, d2	0.0
Delay (s)	3.8
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	268	36	44	581	36	139	148	14	40	83	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	4995		1770	5041		1770	1839		1770	3539	1583
Flt Permitted	0.32	1.00		0.56	1.00		0.70	1.00		0.65	1.00	1.00
Satd. Flow (perm)	596	4995		1042	5041		1304	1839		1219	3539	1583
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
Adj. Flow (vph)	42	268	36	44	581	36	139	148	14	40	83	75
RTOR Reduction (vph)	0	28	0	0	13	0	0	3	0	0	0	26
Lane Group Flow (vph)	42	276	0	44	604	0	139	159	0	40	83	49
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.1	16.1		16.1	16.1		49.4	49.4		49.4	49.4	49.4
Effective Green, g (s)	16.1	16.1		16.1	16.1		49.4	49.4		49.4	49.4	49.4
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.66		0.66	0.66	0.66
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	127	1072		223	1082		858	1211		802	2331	1042
v/s Ratio Prot		0.06			c0.12			0.09			0.02	
v/s Ratio Perm	0.07			0.04			c0.11			0.03		0.03
v/c Ratio	0.33	0.26		0.20	0.56		0.16	0.13		0.05	0.04	0.05
Uniform Delay, d1	24.9	24.5		24.2	26.3		4.9	4.8		4.5	4.5	4.5
Progression Factor	1.00	1.00		1.00	1.00		0.65	0.64		1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1		0.4	0.6		0.4	0.2		0.1	0.0	0.1
Delay (s)	26.4	24.6		24.6	26.9		3.6	3.3		4.6	4.5	4.6
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		24.8			26.7			3.4			4.6	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			18.7				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			75.0				Sum of lost time (s)		9.5			
Intersection Capacity Utilization			43.2%				ICU Level of Service		A			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street



















Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations						
Volume (vph)	139	772	410	27	79	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	0.99		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5427	4534		2959	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5427	4534		2959	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	139	772	410	27	79	59
RTOR Reduction (vph)	65	34	6	0	0	0
Lane Group Flow (vph)	60	752	431	0	138	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	55.0	55.0	24.0		21.0	
Effective Green, g (s)	55.0	55.0	24.0		21.0	
Actuated g/C Ratio	0.48	0.48	0.21		0.18	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	616	2595	946		540	
v/s Ratio Prot	0.05	c0.14	c0.09		c0.05	
v/s Ratio Perm						
v/c Ratio	0.10	0.29	0.46		0.26	
Uniform Delay, d1	16.4	18.2	39.8		40.3	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.3	1.6		0.3	
Delay (s)	16.7	18.5	41.4		40.5	
Level of Service	B	B	D		D	
Approach Delay (s)		18.2	41.4		40.5	
Approach LOS		B	D		D	

Intersection Summary


















HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	0	177	214	37	488	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5	5.0	5.0					
Lane Util. Factor					0.91	0.91	0.81	0.81					
Frt					0.95	0.85	1.00	1.00					
Flt Protected					1.00	1.00	0.95	1.00					
Satd. Flow (prot)					2895	1297	1290	5430					
Flt Permitted					1.00	1.00	0.95	1.00					
Satd. Flow (perm)					2895	1297	1290	5430					
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	
Adj. Flow (vph)	0	0	0	0	177	214	37	488	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	46	61	19	8	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	223	61	14	484	0	0	0	0	
Turn Type					NA	Perm	Perm	NA					
Protected Phases					8			2					
Permitted Phases						8	2						
Actuated Green, G (s)					57.5	57.5	48.0	48.0					
Effective Green, g (s)					57.5	57.5	48.0	48.0					
Actuated g/C Ratio					0.50	0.50	0.42	0.42					
Clearance Time (s)					4.5	4.5	5.0	5.0					
Vehicle Extension (s)					3.0	3.0	3.0	3.0					
Lane Grp Cap (vph)					1447	648	538	2266					
v/s Ratio Prot					c0.08								
v/s Ratio Perm						0.05	0.01	0.09					
v/c Ratio					0.15	0.09	0.03	0.21					
Uniform Delay, d1					15.6	15.1	19.7	21.4					
Progression Factor					1.00	1.00	2.30	1.39					
Incremental Delay, d2					0.2	0.3	0.1	0.2					
Delay (s)					15.8	15.4	45.4	30.0					
Level of Service					B	B	D	C					
Approach Delay (s)		0.0			15.7			30.9			0.0		
Approach LOS		A			B			C			A		
Intersection Summary													
HCM 2000 Control Delay			24.4		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.18										
Actuated Cycle Length (s)			115.0		Sum of lost time (s)				9.5				
Intersection Capacity Utilization			25.6%		ICU Level of Service				A				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis
 7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	93	79	7	96	87	10	39	0	78	98	13
Peak Hour 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
Hourly flow rate (vph)	7	93	79	7	96	87	10	39	0	78	98	13
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	179	190	49	127	62							
Volume Left (vph)	7	7	10	78	0							
Volume Right (vph)	79	87	0	0	13							
Hadj (s)	-0.22	-0.23	0.07	0.34	-0.11							
Departure Headway (s)	4.5	4.5	5.2	5.8	5.3							
Degree Utilization, x	0.23	0.24	0.07	0.20	0.09							
Capacity (veh/h)	742	749	627	586	635							
Control Delay (s)	8.9	8.9	8.6	9.0	7.6							
Approach Delay (s)	8.9	8.9	8.6	8.6								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.8									
Level of Service			A									
Intersection Capacity Utilization			30.9%	ICU Level of Service	A							
Analysis Period (min)			15									




















HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (veh/h)	9	4	4	9	29	34	4	123	8	32	209	15	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour 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	
Hourly flow rate (vph)	9	4	4	9	29	34	4	123	8	32	209	15	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None						
Median storage (veh)													
Upstream signal (ft)												288	
pX, platoon unblocked													
vC, conflicting volume	398	420	112	310	423	66	224					131	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	398	420	112	310	423	66	224					131	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1					4.1	
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2	
p0 queue free %	98	99	100	99	94	97	100					98	
cM capacity (veh/h)	486	510	920	602	508	985	1342					1452	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2							
Volume Total	17	72	66	70	136	120							
Volume Left	9	9	4	0	32	0							
Volume Right	4	34	0	8	0	15							
cSH	553	676	1342	1700	1452	1700							
Volume to Capacity	0.03	0.11	0.00	0.04	0.02	0.07							
Queue Length 95th (ft)	2	9	0	0	2	0							
Control Delay (s)	11.7	11.0	0.5	0.0	1.9	0.0							
Lane LOS	B	B	A		A								
Approach Delay (s)	11.7	11.0	0.2		1.0								
Approach LOS	B	B											
Intersection Summary													
Average Delay			2.7										
Intersection Capacity Utilization			25.1%		ICU Level of Service				A				
Analysis Period (min)			15										























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	38	21	4	45	41	18	130	9	40	223	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.95			0.94			0.99			0.97	
Flt Protected	0.95	1.00			1.00			0.99			0.99	
Satd. Flow (prot)	1770	1763			1744			3489			3413	
Flt Permitted	0.70	1.00			0.99			0.91			0.91	
Satd. Flow (perm)	1301	1763			1737			3193			3118	
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
Adj. Flow (vph)	34	38	21	4	45	41	18	130	9	40	223	65
RTOR Reduction (vph)	0	12	0	0	24	0	0	5	0	0	29	0
Lane Group Flow (vph)	34	47	0	0	66	0	0	152	0	0	299	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	555	752			741			1447			1413	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.03				c0.04			0.05			c0.10	
v/c Ratio	0.06	0.06			0.09			0.11			0.21	
Uniform Delay, d1	12.7	12.7			12.8			11.8			12.4	
Progression Factor	1.00	1.00			1.00			1.00			0.52	
Incremental Delay, d2	0.2	0.2			0.2			0.1			0.3	
Delay (s)	12.9	12.8			13.1			11.9			6.8	
Level of Service	B	B			B			B			A	
Approach Delay (s)		12.8			13.1			11.9			6.8	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			9.7								HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.15									
Actuated Cycle Length (s)			75.0								Sum of lost time (s)	9.0
Intersection Capacity Utilization			33.2%								ICU Level of Service	A
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 			
Volume (vph)	705	136	75	0	0	0	0	138	234	422	342	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00		
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1610	3272	1583					3539	1583	3433	1863		
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1610	3272	1583					3539	1583	3433	1863		
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	
Adj. Flow (vph)	705	136	75	0	0	0	0	138	234	422	342	0	
RTOR Reduction (vph)	0	0	54	0	0	0	0	0	151	0	0	0	
Lane Group Flow (vph)	352	489	21	0	0	0	0	138	83	422	342	0	
Turn Type	Split	NA	Prot					NA	Prot	Prot	NA		
Protected Phases	4	4	4					2	2	1	6		
Permitted Phases													
Actuated Green, G (s)	20.6	20.6	20.6					26.5	26.5	14.4	44.4		
Effective Green, g (s)	20.6	20.6	20.6					26.5	26.5	14.4	44.4		
Actuated g/C Ratio	0.27	0.27	0.27					0.35	0.35	0.19	0.59		
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	442	898	434					1250	559	659	1102		
v/s Ratio Prot	c0.22	0.15	0.01					0.04	0.05	c0.12	c0.18		
v/s Ratio Perm													
v/c Ratio	0.80	0.54	0.05					0.11	0.15	0.64	0.31		
Uniform Delay, d1	25.3	23.2	20.0					16.3	16.5	27.9	7.6		
Progression Factor	0.97	0.98	0.77					1.15	2.10	1.00	1.29		
Incremental Delay, d2	9.6	0.7	0.0					0.2	0.6	1.9	0.1		
Delay (s)	34.0	23.3	15.4					18.9	35.4	29.7	10.0		
Level of Service	C	C	B					B	D	C	B		
Approach Delay (s)		26.8			0.0			29.2			20.9		
Approach LOS		C			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			25.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.56										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			95.7%									ICU Level of Service	F
Analysis Period (min)			15										
c	Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	430	198	661	22	147	0	0	365	44
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	
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.98	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1593	3185	1425	1593	3185			4503	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1593	3185	1425	1593	3185			4503	
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
Adj. Flow (vph)	0	0	0	430	198	661	22	147	0	0	365	44
RTOR Reduction (vph)	0	0	0	0	0	423	0	0	0	0	16	0
Lane Group Flow (vph)	0	0	0	430	198	238	22	147	0	0	393	0
Turn Type				Split	NA	Prot	Prot	NA			NA	
Protected Phases				8	8	8	5	2			6	
Permitted Phases												
Actuated Green, G (s)				27.0	27.0	27.0	7.6	40.0			28.4	
Effective Green, g (s)				27.0	27.0	27.0	7.6	40.0			28.4	
Actuated g/C Ratio				0.36	0.36	0.36	0.10	0.53			0.38	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				573	1146	513	161	1698			1705	
v/s Ratio Prot				c0.27	0.06	0.17	c0.01	0.05			c0.09	
v/s Ratio Perm												
v/c Ratio				0.75	0.17	0.46	0.14	0.09			0.23	
Uniform Delay, d1				21.0	16.4	18.4	30.7	8.6			15.9	
Progression Factor				1.00	1.00	1.00	0.54	0.48			1.00	
Incremental Delay, d2				5.5	0.1	0.7	0.3	0.1			0.3	
Delay (s)				26.5	16.5	19.1	16.9	4.2			16.2	
Level of Service				C	B	B	B	A			B	
Approach Delay (s)		0.0			21.2			5.8			16.2	
Approach LOS		A			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			18.7	HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			75.0	Sum of lost time (s)				12.0				
Intersection Capacity Utilization			95.7%	ICU Level of Service				F				
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	525	112	0	0	0	0	418	80	82	436	0
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	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5602						3109		1593	3185	
Flt Permitted		1.00						1.00		0.42	1.00	
Satd. Flow (perm)		5602						3109		704	3185	
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
Adj. Flow (vph)	70	525	112	0	0	0	0	418	80	82	436	0
RTOR Reduction (vph)	0	57	0	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	650		0	0	0	0	472	0	82	436	
Turn Type	Split	NA						NA	pm+pt		NA	
Protected Phases	4	4						2	1		6	
Permitted Phases									6			
Actuated Green, G (s)		23.0						21.0	29.0		29.0	
Effective Green, g (s)		23.0						21.0	29.0		29.0	
Actuated g/C Ratio		0.38						0.35	0.48		0.48	
Clearance Time (s)		4.0						4.0	4.0		4.0	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2147						1088	399		1539	
v/s Ratio Prot		c0.12						c0.15	0.01		c0.14	
v/s Ratio Perm									0.09			
v/c Ratio		0.30						0.43	0.21		0.28	
Uniform Delay, d1		12.9						14.9	10.5		9.3	
Progression Factor		1.00						1.00	0.45		0.43	
Incremental Delay, d2		0.1						1.3	0.2		0.4	
Delay (s)		13.0						16.2	5.0		4.5	
Level of Service		B						B	A		A	
Approach Delay (s)		13.0			0.0			16.2			4.6	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay		11.4			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.37										
Actuated Cycle Length (s)		60.0			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		51.6%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑		↑	↑↑			↑↑↑	
Volume (vph)	0	0	0	94	296	63	94	370	0	0	408	35
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	
Lane Util. Factor					0.91		1.00	0.95			0.91	
Flt					0.98		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4435		1593	3185			4523	
Flt Permitted					0.99		0.48	1.00			1.00	
Satd. Flow (perm)					4435		809	3185			4523	
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
Adj. Flow (vph)	0	0	0	94	296	63	94	370	0	0	408	35
RTOR Reduction (vph)	0	0	0	0	36	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	0	0	0	417	0	94	370	0	0	426	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					26.0		26.0	26.0			18.0	
Effective Green, g (s)					26.0		26.0	26.0			18.0	
Actuated g/C Ratio					0.43		0.43	0.43			0.30	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)					1921		402	1380			1356	
v/s Ratio Prot					c0.09		0.02	c0.12			c0.09	
v/s Ratio Perm							0.09					
v/c Ratio					0.22		0.23	0.27			0.31	
Uniform Delay, d1					10.6		11.0	10.9			16.2	
Progression Factor					1.00		0.27	0.31			1.89	
Incremental Delay, d2					0.3		1.3	0.4			0.6	
Delay (s)					10.9		4.2	3.9			31.2	
Level of Service					B		A	A			C	
Approach Delay (s)		0.0			10.9			3.9			31.2	
Approach LOS		A			B			A			C	





















Intersection Summary

HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	3	273	86	1	268	91	0	358	26	0	500	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frt		0.96			0.96			0.99			0.98	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3071			3064			3153			3124	
Flt Permitted		0.95			0.95			1.00			1.00	
Satd. Flow (perm)		2924			2924			3153			3124	
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
Adj. Flow (vph)	3	273	86	1	268	91	0	358	26	0	500	73
RTOR Reduction (vph)	0	49	0	0	56	0	0	9	0	0	19	0
Lane Group Flow (vph)	0	313	0	0	304	0	0	375	0	0	554	0
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.5			21.5			27.5			27.5	
Effective Green, g (s)		21.5			21.5			27.5			27.5	
Actuated g/C Ratio		0.36			0.36			0.46			0.46	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Lane Grp Cap (vph)		1047			1047			1445			1431	
v/s Ratio Prot								0.12			c0.18	
v/s Ratio Perm		c0.11			0.10							
v/c Ratio		0.30			0.29			0.26			0.39	
Uniform Delay, d1		13.8			13.8			10.0			10.7	
Progression Factor		1.00			1.00			1.51			1.00	
Incremental Delay, d2		0.7			0.7			0.4			0.8	
Delay (s)		14.6			14.5			15.5			11.5	
Level of Service		B			B			B			B	
Approach Delay (s)		14.6			14.5			15.5			11.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.7					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		11.0		
Intersection Capacity Utilization			41.0%					ICU Level of Service		A		
Analysis Period (min)			15									
c	Critical Lane Group											

















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											 	
Volume (veh/h)	0	26	15	12	52	0	0	0	0	12	18	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	26	15	12	52	0	0	0	0	12	18	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	52			41			128	110	34	110	117	52
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	52			41			128	110	34	110	117	52
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	98	99
cM capacity (veh/h)	1554			1568			816	775	1040	864	767	1016
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	41	64	21	19								
Volume Left	0	12	12	0								
Volume Right	15	0	0	10								
cSH	1700	1568	820	881								
Volume to Capacity	0.02	0.01	0.03	0.02								
Queue Length 95th (ft)	0	1	2	2								
Control Delay (s)	0.0	1.4	9.5	9.2								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.4	9.4									
Approach LOS			A									
Intersection Summary												
Average Delay			3.2									
Intersection Capacity Utilization			20.1%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	27	13	20	30	0	0	0	0	6	3	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	27	13	20	30	0	0	0	0	6	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked												
vC, conflicting volume	30			40			107	104	34	104	110	30
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			40			107	104	34	104	110	30
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	100	100
cM capacity (veh/h)	1583			1570			859	777	1040	868	770	1044
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	40	50	8	4								
Volume Left	0	20	6	0								
Volume Right	13	0	0	2								
cSH	1700	1570	847	906								
Volume to Capacity	0.02	0.01	0.01	0.00								
Queue Length 95th (ft)	0	1	1	0								
Control Delay (s)	0.0	3.0	9.3	9.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	3.0	9.2									
Approach LOS			A									
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			19.4%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis













17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	51	151	130	45	87	127
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	51	151	130	45	87	127
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		272	102	253	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		272	102	253	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	97		75	94	86	88
cM capacity (veh/h)	1623		524	763	630	1085
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total	51	151	175	87	127	
Volume Left	51	0	130	0	0	
Volume Right	0	151	0	0	127	
cSH	1623	1700	570	630	1085	
Volume to Capacity	0.03	0.09	0.31	0.14	0.12	
Queue Length 95th (ft)	2	0	32	12	10	
Control Delay (s)	7.3	0.0	14.1	11.6	8.8	
Lane LOS	A		B	B	A	
Approach Delay (s)	1.8		14.1	9.9		
Approach LOS			B	A		
Intersection Summary						
Average Delay			8.4			
Intersection Capacity Utilization			26.2%	ICU Level of Service	A	
Analysis Period (min)			15			

















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑						↑↑↑	↑↑			
Volume (vph)	51	214	0	0	0	0	0	536	1207	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0	5.0			
Lane Util. Factor		0.91						0.91	0.88			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4533						4577	2508			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4533						4577	2508			
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
Adj. Flow (vph)	51	214	0	0	0	0	0	536	1207	0	0	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	539	0	0	0
Lane Group Flow (vph)	0	237	0	0	0	0	0	536	668	0	0	0
Turn Type	Perm	NA						NA	custom			
Protected Phases		2						1				
Permitted Phases	2								5			
Actuated Green, G (s)		27.0						23.0	29.0			
Effective Green, g (s)		27.0						23.0	29.0			
Actuated g/C Ratio		0.45						0.38	0.48			
Clearance Time (s)		5.0						5.0	5.0			
Vehicle Extension (s)		3.0						3.0	3.0			
Lane Grp Cap (vph)		2039						1754	1212			
v/s Ratio Prot								0.12				
v/s Ratio Perm		0.05							c0.27			
v/c Ratio		0.12						0.31	0.55			
Uniform Delay, d1		9.6						12.9	10.9			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.1						0.5	1.8			
Delay (s)		9.7						13.4	12.7			
Level of Service		A						B	B			
Approach Delay (s)		9.7			0.0			12.9			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.5					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			93.4%					ICU Level of Service		F		
Analysis Period (min)			15									
c	Critical Lane Group											




















HCM Signalized Intersection Capacity Analysis

19: Jackson Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	260	366	441	0	0	0	0	194	33	66	99	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.5		5.5	5.5		
Lane Util. Factor		0.91						1.00		1.00	1.00		
Frt		0.94						0.98		1.00	1.00		
Flt Protected		0.99						1.00		0.95	1.00		
Satd. Flow (prot)		4713						1826		1770	1863		
Flt Permitted		0.99						1.00		0.59	1.00		
Satd. Flow (perm)		4713						1826		1107	1863		
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	
Adj. Flow (vph)	260	366	441	0	0	0	0	194	33	66	99	0	
RTOR Reduction (vph)	0	170	0	0	0	0	0	8	0	0	0	0	
Lane Group Flow (vph)	0	897	0	0	0	0	0	219	0	66	99	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		34.5						29.5		29.5	29.5		
Effective Green, g (s)		34.5						29.5		29.5	29.5		
Actuated g/C Ratio		0.46						0.39		0.39	0.39		
Clearance Time (s)		5.5						5.5		5.5	5.5		
Lane Grp Cap (vph)		2167						718		435	732		
v/s Ratio Prot								c0.12			0.05		
v/s Ratio Perm		0.19								0.06			
v/c Ratio		0.41						0.31		0.15	0.14		
Uniform Delay, d1		13.5						15.7		14.7	14.6		
Progression Factor		1.00						1.00		0.68	0.69		
Incremental Delay, d2		0.6						1.1		0.7	0.4		
Delay (s)		14.1						16.8		10.7	10.4		
Level of Service		B						B		B	B		
Approach Delay (s)		14.1			0.0			16.8			10.6		
Approach LOS		B			A			B			B		
Intersection Summary													
HCM 2000 Control Delay			14.1									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.36										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			69.6%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	2	279	50	256	238	0	0	188	1262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			5.5	4.0
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425
Flt Permitted				0.95	1.00	1.00	0.64	1.00			1.00	1.00
Satd. Flow (perm)				1593	1676	1425	1071	1676			1676	1425
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
Adj. Flow (vph)	0	0	0	2	279	50	256	238	0	0	188	1262
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	2	279	13	256	238	0	0	188	1262
Turn Type				Split	NA	Perm	Perm	NA			NA	Free
Protected Phases				8	8			2			6	
Permitted Phases						8	2					Free
Actuated Green, G (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0
Effective Green, g (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0
Actuated g/C Ratio				0.26	0.26	0.26	0.59	0.59			0.59	1.00
Clearance Time (s)				5.5	5.5	5.5	5.5	5.5			5.5	
Lane Grp Cap (vph)				414	435	370	635	994			994	1425
v/s Ratio Prot				0.00	0.17			0.14			0.11	
v/s Ratio Perm						0.01	0.24					c0.89
v/c Ratio				0.00	0.64	0.04	0.40	0.24			0.19	0.89
Uniform Delay, d1				20.6	24.6	20.7	8.2	7.2			7.0	0.0
Progression Factor				1.00	1.00	1.00	1.14	1.14			1.00	1.00
Incremental Delay, d2				0.0	7.1	0.2	1.8	0.5			0.4	8.4
Delay (s)				20.6	31.7	20.9	11.1	8.8			7.4	8.4
Level of Service				C	C	C	B	A			A	A
Approach Delay (s)		0.0			30.0			10.0			8.3	
Approach LOS		A			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.8		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					11.0		
Intersection Capacity Utilization			69.6%		ICU Level of Service					C		
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	442	1123	0	0	0	0	265	67	20	255	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.92	0.85					0.97			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		3967	1226					1631			1670	
Flt Permitted		1.00	1.00					1.00			0.97	
Satd. Flow (perm)		3967	1226					1631			1625	
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
Adj. Flow (vph)	32	442	1123	0	0	0	0	265	67	20	255	0
RTOR Reduction (vph)	0	359	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	677	561	0	0	0	0	317	0	0	275	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		19.0	60.0					32.0			32.0	
Effective Green, g (s)		19.0	60.0					32.0			32.0	
Actuated g/C Ratio		0.32	1.00					0.53			0.53	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1256	1226					869			866	
v/s Ratio Prot		0.17						0.19				
v/s Ratio Perm			c0.46								0.17	
v/c Ratio		0.54	0.46					0.36			0.32	
Uniform Delay, d1		16.9	0.0					8.1			7.9	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		1.7	1.2					1.2			1.0	
Delay (s)		18.6	1.2					9.3			8.8	
Level of Service		B	A					A			A	
Approach Delay (s)		12.5			0.0			9.3			8.8	
Approach LOS		B			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.5								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	9.0
Intersection Capacity Utilization			60.3%								ICU Level of Service	B
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Volume (vph)	0	416	17	0	0	0	0	0	0	548	142	0
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	
Lane Util. Factor		0.91								0.91	0.91	
Frt		0.99								1.00	1.00	
Flt Protected		1.00								0.95	0.97	
Satd. Flow (prot)		5055								1610	3282	
Flt Permitted		1.00								0.95	0.97	
Satd. Flow (perm)		5055								1610	3282	
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
Adj. Flow (vph)	0	416	17	0	0	0	0	0	0	548	142	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	119	119	0
Lane Group Flow (vph)	0	424	0	0	0	0	0	0	0	155	297	0
Turn Type		NA								Perm	NA	
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		16.0								22.0	22.0	
Effective Green, g (s)		16.0								22.0	22.0	
Actuated g/C Ratio		0.35								0.48	0.48	
Clearance Time (s)		4.0								4.0	4.0	
Lane Grp Cap (vph)		1758								770	1569	
v/s Ratio Prot		c0.08										
v/s Ratio Perm										c0.10	0.09	
v/c Ratio		0.24								0.20	0.19	
Uniform Delay, d1		10.7								6.9	6.9	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		0.3								0.6	0.3	
Delay (s)		11.0								7.5	7.2	
Level of Service		B								A	A	
Approach Delay (s)		11.0			0.0			0.0			7.3	
Approach LOS		B			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.7								HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.22									
Actuated Cycle Length (s)			46.0								Sum of lost time (s)	8.0
Intersection Capacity Utilization			30.1%								ICU Level of Service	A
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

23: Madison Street & 6th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	
Volume (vph)	0	0	0	31	164	0	0	0	0	0	654	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frt					1.00						0.96	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					4541						4410	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					4541						4410	
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
Adj. Flow (vph)	0	0	0	31	164	0	0	0	0	0	654	210
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	107	0
Lane Group Flow (vph)	0	0	0	0	174	0	0	0	0	0	757	0
Turn Type				Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases												
Actuated Green, G (s)					15.0						22.0	
Effective Green, g (s)					15.0						22.0	
Actuated g/C Ratio					0.33						0.49	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1513						2156	
v/s Ratio Prot					c0.04						c0.17	
v/s Ratio Perm												
v/c Ratio					0.12						0.35	
Uniform Delay, d1					10.4						7.1	
Progression Factor					1.08						1.00	
Incremental Delay, d2					0.1						0.5	
Delay (s)					11.4						7.5	
Level of Service					B						A	
Approach Delay (s)		0.0			11.4			0.0			7.5	
Approach LOS		A			B			A			A	















Intersection Summary

HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		




















c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	331	193	0	0	0	0	0	0	121	622	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0									4.0		
Lane Util. Factor		0.86									0.91		
Frt		0.94									1.00		
Flt Protected		1.00									0.99		
Satd. Flow (prot)		5448									4540		
Flt Permitted		1.00									0.99		
Satd. Flow (perm)		5448									4540		
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	
Adj. Flow (vph)	0	331	193	0	0	0	0	0	0	121	622	0	
RTOR Reduction (vph)	0	119	0	0	0	0	0	0	0	0	48	0	
Lane Group Flow (vph)	0	405	0	0	0	0	0	0	0	0	695	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		23.0									29.0		
Effective Green, g (s)		23.0									29.0		
Actuated g/C Ratio		0.38									0.48		
Clearance Time (s)		4.0									4.0		
Vehicle Extension (s)		3.0									3.0		
Lane Grp Cap (vph)		2088									2194		
v/s Ratio Prot		c0.07											
v/s Ratio Perm											0.15		
v/c Ratio		0.19									0.32		
Uniform Delay, d1		12.3									9.5		
Progression Factor		0.53									1.00		
Incremental Delay, d2		0.2									0.4		
Delay (s)		6.7									9.8		
Level of Service		A									A		
Approach Delay (s)		6.7			0.0			0.0			9.8		
Approach LOS		A			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			8.6									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.26										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			38.3%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Volume (veh/h)	134	0	71	2	0	0	179	227	0	0	201	164
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	134	0	71	2	0	0	179	227	0	0	201	164
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											563	
pX, platoon unblocked												
vC, conflicting volume	754	868	182	756	950	114	365			227		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	754	868	182	756	950	114	365			227		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	49	100	91	99	100	100	85			100		
cM capacity (veh/h)	263	246	829	240	220	918	1190			1339		
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	134	71	179	114	114	134	231					
Volume Left	134	0	179	0	0	0	0					
Volume Right	0	71	0	0	0	0	164					
cSH	263	829	1190	1700	1700	1700	1700					
Volume to Capacity	0.51	0.09	0.15	0.07	0.07	0.08	0.14					
Queue Length 95th (ft)	67	7	13	0	0	0	0					
Control Delay (s)	32.0	9.8	8.6	0.0	0.0	0.0	0.0					
Lane LOS	D	A	A									
Approach Delay (s)	24.3		3.8			0.0						
Approach LOS	C											
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			Err%		ICU Level of Service				H			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street






















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	49	65	58	322	314	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.92		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1683		1770	1863	1863	1583
Flt Permitted	0.98		0.57	1.00	1.00	1.00
Satd. Flow (perm)	1683		1061	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	49	65	58	322	314	60
RTOR Reduction (vph)	58	0	0	0	0	16
Lane Group Flow (vph)	56	0	58	322	314	44
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	6.2		39.9	39.9	39.9	39.9
Effective Green, g (s)	6.2		39.9	39.9	39.9	39.9
Actuated g/C Ratio	0.11		0.74	0.74	0.74	0.74
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	192		782	1374	1374	1167
v/s Ratio Prot	c0.03			c0.17	0.17	
v/s Ratio Perm			0.05			0.03
v/c Ratio	0.29		0.07	0.23	0.23	0.04
Uniform Delay, d1	21.9		2.0	2.3	2.2	1.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.2	0.4	0.4	0.1
Delay (s)	22.8		2.2	2.7	2.6	2.0
Level of Service	C		A	A	A	A
Approach Delay (s)	22.8			2.6	2.5	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			
















HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Volume (vph)	219	555	126	0	0	0	0	247	122	2	202	0
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	
Lane Util. Factor		0.91						0.95			1.00	
Frt		0.98						0.95			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		4919						3364			1862	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		4919						3364			1856	
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
Adj. Flow (vph)	219	555	126	0	0	0	0	247	122	2	202	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	81	0	0	0	0
Lane Group Flow (vph)	0	850	0	0	0	0	0	288	0	0	204	0
Turn Type	Split	NA						NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases										6		
Actuated Green, G (s)		22.0						15.0			15.0	
Effective Green, g (s)		22.0						15.0			15.0	
Actuated g/C Ratio		0.49						0.33			0.33	
Clearance Time (s)		4.0						4.0			4.0	
Lane Grp Cap (vph)		2404						1121			618	
v/s Ratio Prot		c0.17						0.09				
v/s Ratio Perm											c0.11	
v/c Ratio		0.35						0.26			0.33	
Uniform Delay, d1		7.1						10.9			11.2	
Progression Factor		1.00						1.00			1.21	
Incremental Delay, d2		0.4						0.6			1.4	
Delay (s)		7.5						11.5			15.0	
Level of Service		A						B			B	
Approach Delay (s)		7.5			0.0			11.5			15.0	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			9.5					HCM 2000 Level of Service			A	
HCM 2000 Volume to Capacity ratio			0.34									
Actuated Cycle Length (s)			45.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			36.9%					ICU Level of Service		A		
Analysis Period (min)			15									
c	Critical Lane Group											















HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street


















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	185	66	567	116	377	0	0	0	0
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				
Lane Util. Factor					0.91	0.91		0.95				
Frt					0.92	0.85		1.00				
Flt Protected					0.98	1.00		0.99				
Satd. Flow (prot)					2760	1297		3148				
Flt Permitted					0.98	1.00		0.99				
Satd. Flow (perm)					2760	1297		3148				
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
Adj. Flow (vph)	0	0	0	185	66	567	116	377	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	128	128	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	407	155	0	493	0	0	0	0
Turn Type				Split	NA	Perm	Split	NA				
Protected Phases				8	8		2	2				
Permitted Phases						8						
Actuated Green, G (s)					22.0	22.0		15.0				
Effective Green, g (s)					22.0	22.0		15.0				
Actuated g/C Ratio					0.49	0.49		0.33				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1349	634		1049				
v/s Ratio Prot					c0.15			c0.16				
v/s Ratio Perm						0.12						
v/c Ratio					0.30	0.24		0.47				
Uniform Delay, d1					6.9	6.7		11.9				
Progression Factor					1.00	1.00		0.88				
Incremental Delay, d2					0.6	0.9		1.5				
Delay (s)					7.5	7.6		11.9				
Level of Service					A	A		B				
Approach Delay (s)		0.0			7.5			11.9			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			9.2		HCM 2000 Level of Service					A		
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			45.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			48.0%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	324	0	0	0	0	0	843	84	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5708						4515				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5708						4515				
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
Adj. Flow (vph)	84	324	0	0	0	0	0	843	84	0	0	0
RTOR Reduction (vph)	0	36	0	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	372	0	0	0	0	0	907	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		27.0						24.0				
Effective Green, g (s)		27.0						24.0				
Actuated g/C Ratio		0.45						0.40				
Clearance Time (s)		4.5						4.5				
Lane Grp Cap (vph)		2568						1806				
v/s Ratio Prot								c0.20				
v/s Ratio Perm		0.07										
v/c Ratio		0.14						0.50				
Uniform Delay, d1		9.7						13.5				
Progression Factor		1.17						1.00				
Incremental Delay, d2		0.1						1.0				
Delay (s)		11.5						14.5				
Level of Service		B						B				
Approach Delay (s)		11.5			0.0			14.5			0.0	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.6					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)			9.0	
Intersection Capacity Utilization			67.3%					ICU Level of Service			C	
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	21	226	4	4	279	190	7	2	2	267	4	103
Peak Hour 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
Hourly flow rate (vph)	21	226	4	4	279	190	7	2	2	267	4	103
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	251	283	190	11	374							
Volume Left (vph)	21	4	0	7	267							
Volume Right (vph)	4	0	190	2	103							
Hadj (s)	0.04	0.04	-0.67	0.05	0.01							
Departure Headway (s)	5.9	6.1	5.4	6.7	5.7							
Degree Utilization, x	0.41	0.48	0.29	0.02	0.60							
Capacity (veh/h)	572	563	634	442	596							
Control Delay (s)	13.0	13.5	9.4	9.8	16.8							
Approach Delay (s)	13.0	11.8		9.8	16.8							
Approach LOS	B	B		A	C							
Intersection Summary												
Delay			13.8									
Level of Service			B									
Intersection Capacity Utilization			62.5%	ICU Level of Service	B							
Analysis Period (min)			15									























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	275	197	69	23	202	64	75	840	36	40	432	235	
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	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3411		1770	3517		1770	3539	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3411		1770	3517		1770	3539	1583	
Peak-hour factor, 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)	299	214	75	25	220	70	82	913	39	43	470	255	
RTOR Reduction (vph)	0	0	52	0	33	0	0	2	0	0	0	215	
Lane Group Flow (vph)	299	214	23	25	257	0	82	950	0	43	470	40	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over	
Protected Phases	7	4		3	8		5	2		1	6	7	
Permitted Phases			4										
Actuated Green, G (s)	11.7	22.4	22.4	2.7	13.4		7.1	28.1		4.5	25.5	11.7	
Effective Green, g (s)	11.7	22.4	22.4	2.7	13.4		7.1	28.1		4.5	25.5	11.7	
Actuated g/C Ratio	0.16	0.30	0.30	0.04	0.18		0.10	0.38		0.06	0.35	0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	544	1075	481	64	620		170	1340		108	1224	251	
v/s Ratio Prot	c0.09	0.06		0.01	c0.08		c0.05	c0.27		0.02	0.13	0.03	
v/s Ratio Perm			0.01										
v/c Ratio	0.55	0.20	0.05	0.39	0.41		0.48	0.71		0.40	0.38	0.16	
Uniform Delay, d1	28.6	19.0	18.1	34.7	26.7		31.6	19.3		33.3	18.2	26.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.1	0.0	3.9	0.5		2.2	3.2		2.4	0.9	0.3	
Delay (s)	29.7	19.1	18.2	38.6	27.1		33.7	22.5		35.7	19.1	27.1	
Level of Service	C	B	B	D	C		C	C		D	B	C	
Approach Delay (s)		24.4			28.0			23.4			22.7		
Approach LOS		C			C			C			C		
Intersection Summary													
HCM 2000 Control Delay			23.9									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.60										
Actuated Cycle Length (s)			73.7									Sum of lost time (s)	16.0
Intersection Capacity Utilization			56.5%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue


















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	93	173	76	33	171	82	107	817	42	75	306	34	
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	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00	
Frt	1.00	0.95		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583	
Peak-hour factor, 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)	101	188	83	36	186	89	116	888	46	82	333	37	
RTOR Reduction (vph)	0	50	0	0	62	0	0	0	28	0	0	23	
Lane Group Flow (vph)	101	221	0	36	213	0	116	888	18	82	333	14	
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases									2			6	
Actuated Green, G (s)	7.4	15.7		2.9	11.2		6.0	26.0	26.0	5.4	25.4	25.4	
Effective Green, g (s)	7.4	15.7		2.9	11.2		6.0	26.0	26.0	5.4	25.4	25.4	
Actuated g/C Ratio	0.11	0.24		0.04	0.17		0.09	0.39	0.39	0.08	0.38	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	198	803		77	571		312	1394	623	280	1361	609	
v/s Ratio Prot	c0.06	0.07		0.02	c0.06		c0.03	c0.25		0.02	0.09		
v/s Ratio Perm									0.01			0.01	
v/c Ratio	0.51	0.27		0.47	0.37		0.37	0.64	0.03	0.29	0.24	0.02	
Uniform Delay, d1	27.6	20.5		30.8	24.3		28.2	16.2	12.3	28.5	13.8	12.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	0.2		4.4	0.4		0.7	2.2	0.1	0.6	0.4	0.1	
Delay (s)	29.8	20.7		35.2	24.7		29.0	18.4	12.3	29.1	14.2	12.7	
Level of Service	C	C		D	C		C	B	B	C	B	B	
Approach Delay (s)		23.2			25.9			19.3			16.8		
Approach LOS		C			C			B			B		
Intersection Summary													
HCM 2000 Control Delay			20.4									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.53										
Actuated Cycle Length (s)			66.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			51.8%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

Level Of Service Computation Report

Existing plus Project (Maximum Commercial Scenario) Conditions
PM Peak Hour

















HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	52	273	22	14	124	105	44	132	28	45	57	37
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	52	273	22	14	124	105	44	132	28	45	57	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	229			295			544	645	148	539	604	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	229			295			544	645	148	539	604	114
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			87	64	97	84	85	96
cM capacity (veh/h)	1336			1263			347	370	873	287	391	916
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	188	158	76	167	204	45	38	56				
Volume Left	52	0	14	0	44	45	0	0				
Volume Right	0	22	0	105	28	0	0	37				
cSH	1336	1700	1263	1700	396	287	391	629				
Volume to Capacity	0.04	0.09	0.01	0.10	0.52	0.16	0.10	0.09				
Queue Length 95th (ft)	3	0	1	0	71	14	8	7				
Control Delay (s)	2.4	0.0	1.5	0.0	23.4	19.9	15.2	11.3				
Lane LOS	A		A		C	C	C	B				
Approach Delay (s)	1.3		0.5		23.4	15.1						
Approach LOS					C	C						
Intersection Summary												
Average Delay			8.0									
Intersection Capacity Utilization			44.7%		ICU Level of Service			A				
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	9	738	29	0	0	0	0	246	28	103	107	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						4.5		4.5	4.5		
Lane Util. Factor		0.91						0.95		1.00	0.91		
Frt		0.99						0.98		1.00	1.00		
Flt Protected		1.00						1.00		0.95	1.00		
Satd. Flow (prot)		5054						3485		1770	5085		
Flt Permitted		1.00						1.00		0.53	1.00		
Satd. Flow (perm)		5054						3485		995	5085		
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	
Adj. Flow (vph)	9	738	29	0	0	0	0	246	28	103	107	0	
RTOR Reduction (vph)	0	5	0	0	0	0	0	9	0	0	0	0	
Lane Group Flow (vph)	0	771	0	0	0	0	0	265	0	103	107	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		60.5						19.5		19.5	19.5		
Effective Green, g (s)		60.5						19.5		19.5	19.5		
Actuated g/C Ratio		0.67						0.22		0.22	0.22		
Clearance Time (s)		5.5						4.5		4.5	4.5		
Vehicle Extension (s)		3.0						3.0		3.0	3.0		
Lane Grp Cap (vph)		3397						755		215	1101		
v/s Ratio Prot								0.08			0.02		
v/s Ratio Perm		0.15								c0.10			
v/c Ratio		0.23						0.35		0.48	0.10		
Uniform Delay, d1		5.7						29.9		30.8	28.2		
Progression Factor		1.00						1.00		0.87	0.86		
Incremental Delay, d2		0.2						1.3		7.5	0.2		
Delay (s)		5.9						31.2		34.2	24.4		
Level of Service		A						C		C	C		
Approach Delay (s)		5.9			0.0			31.2			29.2		
Approach LOS		A			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			15.2									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.29										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			40.6%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	0	0	0	30	145	274	12	35	218	0	0	168	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95	
Frt					1.00	0.85		1.00	1.00			1.00	
Flt Protected					0.99	1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3509	1583		1770	1863			3539	
Flt Permitted					0.99	1.00		0.65	1.00			1.00	
Satd. Flow (perm)					3509	1583		1203	1863			3539	
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	
Adj. Flow (vph)	0	0	0	30	145	274	12	35	218	0	0	168	
RTOR Reduction (vph)	0	0	0	0	0	241	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	175	33	0	47	218	0	0	168	
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA	
Protected Phases					8				2			6	
Permitted Phases				8		8	2	2					
Actuated Green, G (s)					10.8	10.8		70.2	70.2			70.2	
Effective Green, g (s)					10.8	10.8		70.2	70.2			70.2	
Actuated g/C Ratio					0.12	0.12		0.78	0.78			0.78	
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5	
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					421	189		938	1453			2760	
v/s Ratio Prot									c0.12			0.05	
v/s Ratio Perm					0.05	0.02		0.04					
v/c Ratio					0.42	0.17		0.05	0.15			0.06	
Uniform Delay, d1					36.7	35.6		2.3	2.5			2.3	
Progression Factor					1.01	1.97		0.10	0.48			1.00	
Incremental Delay, d2					0.7	0.4		0.1	0.2			0.0	
Delay (s)					37.7	70.5		0.3	1.4			2.3	
Level of Service					D	E		A	A			A	
Approach Delay (s)		0.0			57.7				1.2			2.3	
Approach LOS		A			E				A			A	
Intersection Summary													
HCM 2000 Control Delay			29.1		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.19										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)				9.0				
Intersection Capacity Utilization			40.6%		ICU Level of Service				A				
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis



























3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	34
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	34
RTOR Reduction (vph)	7
Lane Group Flow (vph)	27
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	70.2
Effective Green, g (s)	70.2
Actuated g/C Ratio	0.78
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1234
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	2.2
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	2.2
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Volume (vph)	94	705	66	36	325	35	215	216	48	53	95	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5020		1770	5011		1770	1812		1770	3539	1583
Flt Permitted	0.53	1.00		0.32	1.00		0.69	1.00		0.53	1.00	1.00
Satd. Flow (perm)	985	5020		589	5011		1290	1812		994	3539	1583
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
Adj. Flow (vph)	94	705	66	36	325	35	215	216	48	53	95	60
RTOR Reduction (vph)	0	13	0	0	15	0	0	9	0	0	0	34
Lane Group Flow (vph)	94	758	0	36	345	0	215	255	0	53	95	26
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Effective Green, g (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	451	2303		270	2299		553	778		426	1519	679
v/s Ratio Prot		c0.15			0.07			0.14			0.03	
v/s Ratio Perm	0.10			0.06			c0.17			0.05		0.02
v/c Ratio	0.21	0.33		0.13	0.15		0.39	0.33		0.12	0.06	0.04
Uniform Delay, d1	13.8	14.7		13.3	13.4		16.6	16.1		14.6	14.2	14.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.4		1.0	0.1		2.1	1.1		0.1	0.0	0.0
Delay (s)	14.8	15.0		14.3	13.5		18.7	17.2		14.7	14.2	14.1
Level of Service	B	B		B	B		B	B		B	B	B
Approach Delay (s)		15.0			13.6			17.9			14.3	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.4				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.36									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			9.5		
Intersection Capacity Utilization			51.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street



















Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations						
Volume (vph)	158	500	1128	35	61	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	1.00		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5415	4556		2984	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5415	4556		2984	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	158	500	1128	35	61	33
RTOR Reduction (vph)	90	65	3	0	0	0
Lane Group Flow (vph)	36	467	1160	0	94	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	24.0	24.0	29.2		16.8	
Effective Green, g (s)	24.0	24.0	29.2		16.8	
Actuated g/C Ratio	0.28	0.28	0.34		0.20	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	364	1528	1565		589	
v/s Ratio Prot	0.03	c0.09	c0.25		c0.03	
v/s Ratio Perm						
v/c Ratio	0.10	0.31	0.74		0.16	
Uniform Delay, d1	22.5	24.0	24.6		28.3	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.5	0.5	3.2		0.1	
Delay (s)	23.0	24.5	27.8		28.4	
Level of Service	C	C	C		C	
Approach Delay (s)		24.2	27.8		28.4	
Approach LOS		C	C		C	

Intersection Summary

HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			


















HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	0	216	696	29	1450	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5	5.0	5.0					
Lane Util. Factor					0.91	0.91	0.81	0.81					
Frt					0.91	0.85	1.00	1.00					
Flt Protected					1.00	1.00	0.95	1.00					
Satd. Flow (prot)					2769	1297	1290	5431					
Flt Permitted					1.00	1.00	0.95	1.00					
Satd. Flow (perm)					2769	1297	1290	5431					
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	
Adj. Flow (vph)	0	0	0	0	216	696	29	1450	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	2	16	12	9	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	562	332	14	1444	0	0	0	0	
Turn Type					NA	Perm	Perm	NA					
Protected Phases					8			2					
Permitted Phases						8	2						
Actuated Green, G (s)					31.3	31.3	44.2	44.2					
Effective Green, g (s)					31.3	31.3	44.2	44.2					
Actuated g/C Ratio					0.37	0.37	0.52	0.52					
Clearance Time (s)					4.5	4.5	5.0	5.0					
Vehicle Extension (s)					3.0	3.0	3.0	3.0					
Lane Grp Cap (vph)					1019	477	670	2824					
v/s Ratio Prot					0.20								
v/s Ratio Perm						c0.26	0.01	0.27					
v/c Ratio					0.55	0.70	0.02	0.51					
Uniform Delay, d1					21.3	22.8	9.9	13.3					
Progression Factor					1.00	1.00	0.03	0.24					
Incremental Delay, d2					0.6	4.4	0.0	0.5					
Delay (s)					21.9	27.2	0.3	3.8					
Level of Service					C	C	A	A					
Approach Delay (s)		0.0			23.9			3.7			0.0		
Approach LOS		A			C			A			A		
Intersection Summary													
HCM 2000 Control Delay			11.4		HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.59										
Actuated Cycle Length (s)			85.0		Sum of lost time (s)				9.5				
Intersection Capacity Utilization			61.6%		ICU Level of Service				B				
Analysis Period (min)			15										
c	Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	139	84	13	134	109	49	238	17	88	126	20
Peak Hour 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
Hourly flow rate (vph)	22	139	84	13	134	109	49	238	17	88	126	20
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	245	256	304	151	83							
Volume Left (vph)	22	13	49	88	0							
Volume Right (vph)	84	109	17	0	20							
Hadj (s)	-0.15	-0.21	0.03	0.33	-0.13							
Departure Headway (s)	5.9	5.8	6.0	6.9	6.4							
Degree Utilization, x	0.40	0.41	0.51	0.29	0.15							
Capacity (veh/h)	554	563	555	477	508							
Control Delay (s)	12.8	12.8	15.0	11.4	9.3							
Approach Delay (s)	12.8	12.8	15.0	10.7								
Approach LOS	B	B	C	B								
Intersection Summary												
Delay			13.0									
Level of Service			B									
Intersection Capacity Utilization			53.4%	ICU Level of Service	A							
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	31	16	17	26	64	18	391	49	53	297	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	40	31	16	17	26	64	18	391	49	53	297	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											288	
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99					
vC, conflicting volume	728	896	165	738	888	220	330			440		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	702	872	133	712	863	220	300			440		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	85	88	98	94	90	92	99			95		
cM capacity (veh/h)	261	267	882	270	270	784	1244			1116		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	87	107	214	244	202	182						
Volume Left	40	17	18	0	53	0						
Volume Right	16	64	0	49	0	33						
cSH	302	444	1244	1700	1116	1700						
Volume to Capacity	0.29	0.24	0.01	0.14	0.05	0.11						
Queue Length 95th (ft)	29	23	1	0	4	0						
Control Delay (s)	21.6	15.7	0.8	0.0	2.5	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	21.6	15.7	0.4		1.3							
Approach LOS	C	C										
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Utilization			44.9%		ICU Level of Service		A					
Analysis Period (min)			15									
























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	133	28	10	118	117	69	371	12	43	271	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.97			0.94			1.00			0.98	
Flt Protected	0.95	1.00			1.00			0.99			0.99	
Satd. Flow (prot)	1770	1814			1739			3498			3432	
Flt Permitted	0.59	1.00			0.99			0.84			0.87	
Satd. Flow (perm)	1091	1814			1724			2968			3006	
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
Adj. Flow (vph)	106	133	28	10	118	117	69	371	12	43	271	62
RTOR Reduction (vph)	0	10	0	0	44	0	0	3	0	0	22	0
Lane Group Flow (vph)	106	151	0	0	201	0	0	449	0	0	354	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	465	773			735			1345			1362	
v/s Ratio Prot		0.08										
v/s Ratio Perm	0.10				c0.12			c0.15			0.12	
v/c Ratio	0.23	0.19			0.27			0.33			0.26	
Uniform Delay, d1	13.7	13.4			14.0			13.2			12.7	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.1	0.6			0.9			0.7			0.5	
Delay (s)	14.8	14.0			14.9			13.9			13.2	
Level of Service	B	B			B			B			B	
Approach Delay (s)		14.3			14.9			13.9			13.2	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.9					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.30									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			61.0%					ICU Level of Service			B	
Analysis Period (min)			15									
c	Critical Lane Group											




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 			
Volume (vph)	1007	295	73	0	0	0	0	340	430	591	353	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00		
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1610	3287	1583					3539	1583	3433	1863		
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1610	3287	1583					3539	1583	3433	1863		
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	
Adj. Flow (vph)	1007	295	73	0	0	0	0	340	430	591	353	0	
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	159	0	0	0	
Lane Group Flow (vph)	503	799	25	0	0	0	0	340	271	591	353	0	
Turn Type	Split	NA	Prot					NA	Prot	Prot	NA		
Protected Phases	4	4	4					2	2	1	6		
Permitted Phases													
Actuated Green, G (s)	31.1	31.1	31.1					25.9	25.9	19.5	48.9		
Effective Green, g (s)	31.1	31.1	31.1					25.9	25.9	19.5	48.9		
Actuated g/C Ratio	0.35	0.35	0.35					0.29	0.29	0.22	0.54		
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	556	1135	547					1018	455	743	1012		
v/s Ratio Prot	c0.31	0.24	0.02					0.10	c0.17	c0.17	0.19		
v/s Ratio Perm													
v/c Ratio	0.90	0.87dl	0.05					0.33	0.60	0.80	0.35		
Uniform Delay, d1	28.0	25.5	19.6					25.3	27.6	33.4	11.6		
Progression Factor	0.86	0.85	0.72					1.00	1.00	0.85	1.09		
Incremental Delay, d2	18.1	2.0	0.0					0.9	5.7	5.4	0.2		
Delay (s)	42.1	23.7	14.1					26.1	33.2	33.6	12.9		
Level of Service	D	C	B					C	C	C	B		
Approach Delay (s)		29.9			0.0			30.1			25.9		
Approach LOS		C			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			28.7									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.77										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			114.7%									ICU Level of Service	H
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	269	138	617	85	298	0	0	750	34	
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		
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91		
Frt				1.00	1.00	0.85	1.00	1.00			0.99		
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1593	3185	1425	1593	3185			4547		
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (perm)				1593	3185	1425	1593	3185			4547		
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	
Adj. Flow (vph)	0	0	0	269	138	617	85	298	0	0	750	34	
RTOR Reduction (vph)	0	0	0	0	0	325	0	0	0	0	4	0	
Lane Group Flow (vph)	0	0	0	269	138	292	85	298	0	0	780	0	
Turn Type				Split	NA	Prot	Prot	NA			NA		
Protected Phases				8	8	8	5	2			6		
Permitted Phases													
Actuated Green, G (s)				30.2	30.2	30.2	15.2	51.8			32.6		
Effective Green, g (s)				30.2	30.2	30.2	15.2	51.8			32.6		
Actuated g/C Ratio				0.34	0.34	0.34	0.17	0.58			0.36		
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0		
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0		
Lane Grp Cap (vph)				534	1068	478	269	1833			1647		
v/s Ratio Prot				0.17	0.04	c0.20	c0.05	0.09			c0.17		
v/s Ratio Perm													
v/c Ratio				0.50	0.13	0.61	0.32	0.16			0.47		
Uniform Delay, d1				23.9	20.8	25.0	32.8	8.9			22.1		
Progression Factor				1.00	1.00	1.00	0.75	0.99			1.00		
Incremental Delay, d2				0.8	0.1	2.3	0.5	0.1			1.0		
Delay (s)				24.7	20.8	27.3	25.0	9.0			23.1		
Level of Service				C	C	C	C	A			C		
Approach Delay (s)		0.0			25.7			12.6			23.1		
Approach LOS		A			C			B			C		
Intersection Summary													
HCM 2000 Control Delay			22.5	HCM 2000 Level of Service							C		
HCM 2000 Volume to Capacity ratio			0.50										
Actuated Cycle Length (s)			90.0	Sum of lost time (s)					12.0				
Intersection Capacity Utilization			114.7%	ICU Level of Service							H		
Analysis Period (min)			15										
c	Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	486	191	0	0	0	0	491	80	99	724	0
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	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frt		0.96						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5518						3118		1593	3185	
Flt Permitted		0.99						1.00		0.37	1.00	
Satd. Flow (perm)		5518						3118		621	3185	
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
Adj. Flow (vph)	119	486	191	0	0	0	0	491	80	99	724	0
RTOR Reduction (vph)	0	94	0	0	0	0	0	21	0	0	0	0
Lane Group Flow (vph)	0	702	0	0	0	0	0	550	0	99	724	0
Turn Type	Split	NA						NA		pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)		23.0						21.0		29.0	29.0	
Effective Green, g (s)		23.0						21.0		29.0	29.0	
Actuated g/C Ratio		0.38						0.35		0.48	0.48	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Vehicle Extension (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2115						1091		364	1539	
v/s Ratio Prot		c0.13						0.18		0.02	c0.23	
v/s Ratio Perm										0.11		
v/c Ratio		0.33						0.50		0.27	0.47	
Uniform Delay, d1		13.1						15.4		11.7	10.4	
Progression Factor		1.00						1.00		0.78	0.79	
Incremental Delay, d2		0.1						1.7		0.4	0.9	
Delay (s)		13.2						17.1		9.4	9.2	
Level of Service		B						B		A	A	
Approach Delay (s)		13.2			0.0			17.1			9.2	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.7					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		12.0		
Intersection Capacity Utilization			55.2%					ICU Level of Service		B		
Analysis Period (min)			15									
c	Critical Lane Group											





















HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			 			  	
Volume (vph)	0	0	0	161	511	94	135	480	0	0	612	83
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	
Lane Util. Factor					0.91		1.00	0.95			0.91	
Frt					0.98		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4446		1593	3185			4495	
Flt Permitted					0.99		0.33	1.00			1.00	
Satd. Flow (perm)					4446		547	3185			4495	
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
Adj. Flow (vph)	0	0	0	161	511	94	135	480	0	0	612	83
RTOR Reduction (vph)	0	0	0	0	30	0	0	0	0	0	29	0
Lane Group Flow (vph)	0	0	0	0	736	0	135	480	0	0	666	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					26.0		26.0	26.0			18.0	
Effective Green, g (s)					26.0		26.0	26.0			18.0	
Actuated g/C Ratio					0.43		0.43	0.43			0.30	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)					1926		306	1380			1348	
v/s Ratio Prot					c0.17		0.03	c0.15			c0.15	
v/s Ratio Perm							0.16					
v/c Ratio					0.38		0.44	0.35			0.49	
Uniform Delay, d1					11.5		14.5	11.3			17.3	
Progression Factor					1.00		0.44	0.50			1.50	
Incremental Delay, d2					0.6		4.1	0.6			1.0	
Delay (s)					12.1		10.5	6.2			26.9	
Level of Service					B		B	A			C	
Approach Delay (s)		0.0			12.1			7.2			26.9	
Approach LOS		A			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			15.6		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			60.0		Sum of lost time (s)					12.0		
Intersection Capacity Utilization			55.2%		ICU Level of Service					B		
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	6	319	109	3	379	114	2	489	35	0	788	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frt		0.96			0.97			0.99			0.98	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3063			3075			3153			3131	
Flt Permitted		0.95			0.95			0.95			1.00	
Satd. Flow (perm)		2905			2930			3003			3131	
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
Adj. Flow (vph)	6	319	109	3	379	114	2	489	35	0	788	100
RTOR Reduction (vph)	0	55	0	0	46	0	0	9	0	0	16	0
Lane Group Flow (vph)	0	379	0	0	450	0	0	517	0	0	872	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		23.5			23.5			25.5			25.5	
Effective Green, g (s)		23.5			23.5			25.5			25.5	
Actuated g/C Ratio		0.39			0.39			0.42			0.42	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Lane Grp Cap (vph)		1137			1147			1276			1330	
v/s Ratio Prot											c0.28	
v/s Ratio Perm		0.13			c0.15			0.17				
v/c Ratio		0.33			0.39			0.41			0.66	
Uniform Delay, d1		12.8			13.1			12.0			13.7	
Progression Factor		1.00			1.00			1.41			1.00	
Incremental Delay, d2		0.8			1.0			0.9			2.5	
Delay (s)		13.6			14.1			17.8			16.3	
Level of Service		B			B			B			B	
Approach Delay (s)		13.6			14.1			17.8			16.3	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.7								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			55.5%								ICU Level of Service	B
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	87	39	18	83	0	0	0	0	10	35	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	87	39	18	83	0	0	0	0	10	35	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	83			126			264	226	106	226	245	83
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			126			264	226	106	226	245	83
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	95	98
cM capacity (veh/h)	1514			1460			640	665	948	723	649	976
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	126	101	28	38								
Volume Left	0	18	10	0								
Volume Right	39	0	0	21								
cSH	1700	1460	674	794								
Volume to Capacity	0.07	0.01	0.04	0.05								
Queue Length 95th (ft)	0	1	3	4								
Control Delay (s)	0.0	1.4	10.6	9.8								
Lane LOS		A	B	A								
Approach Delay (s)	0.0	1.4	10.1									
Approach LOS			B									
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			25.7%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											 	
Volume (veh/h)	0	208	12	30	222	0	0	0	0	14	21	86
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	208	12	30	222	0	0	0	0	14	21	86
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	0.99
vC, conflicting volume	222			220			592	496	214	496	502	222
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	222			209			585	487	203	487	493	222
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	97	95	89
cM capacity (veh/h)	1347			1350			356	466	831	478	462	818
Direction, Lane #												
	EB 1	WB 1	SB 1	SB 2								
Volume Total	220	252	24	96								
Volume Left	0	30	14	0								
Volume Right	12	0	0	86								
cSH	1700	1350	471	754								
Volume to Capacity	0.13	0.02	0.05	0.13								
Queue Length 95th (ft)	0	2	4	11								
Control Delay (s)	0.0	1.1	13.1	10.5								
Lane LOS		A	B	B								
Approach Delay (s)	0.0	1.1	11.0									
Approach LOS			B									
Intersection Summary												
Average Delay			2.7									
Intersection Capacity Utilization			38.8%		ICU Level of Service			A				
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	179	217	209	120	101	99
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	179	217	209	120	101	99
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		508	358	575	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		508	358	575	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	89		34	76	74	91
cM capacity (veh/h)	1623		316	506	381	1085
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total	179	217	329	101	99	
Volume Left	179	0	209	0	0	
Volume Right	0	217	0	0	99	
cSH	1623	1700	366	381	1085	
Volume to Capacity	0.11	0.13	0.90	0.26	0.09	
Queue Length 95th (ft)	9	0	226	26	8	
Control Delay (s)	7.5	0.0	59.0	17.8	8.7	
Lane LOS	A		F	C	A	
Approach Delay (s)	3.4		59.0	13.3		
Approach LOS			F	B		
Intersection Summary						
Average Delay			25.3			
Intersection Capacity Utilization			41.1%	ICU Level of Service	A	
Analysis Period (min)			15			

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #17
Webster Street / Embarcadero
Existing plus Commercial
PM Peak Hour

PART A or PART B satisfied YES NO

PART A PART A satisfied YES NO

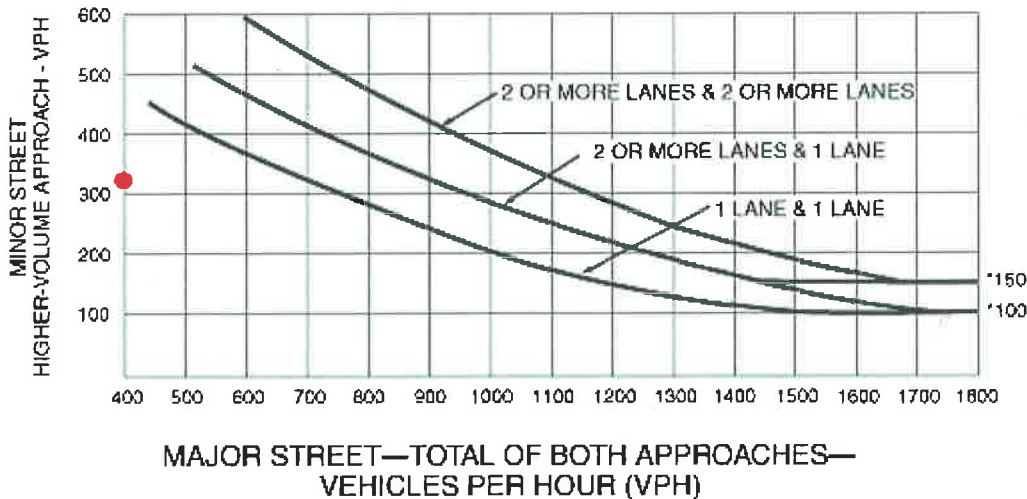
(All parts 1, 2, and 3 below must be satisfied)

1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and Yes No 5.4
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and Yes No 329
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches. Yes No 925

PART B PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour























396/311

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.





















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  	 			
Volume (vph)	86	394	0	0	0	0	0	512	903	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0	5.0			
Lane Util. Factor		0.91						0.91	0.88			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4536						4577	2508			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4536						4577	2508			
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
Adj. Flow (vph)	86	394	0	0	0	0	0	512	903	0	0	0
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	340	0	0	0
Lane Group Flow (vph)	0	443	0	0	0	0	0	512	563	0	0	0
Turn Type	Perm	NA						NA	custom			
Protected Phases		2						1				
Permitted Phases	2								5			
Actuated Green, G (s)		34.0						16.0	34.0			
Effective Green, g (s)		34.0						16.0	34.0			
Actuated g/C Ratio		0.57						0.27	0.57			
Clearance Time (s)		5.0						5.0	5.0			
Vehicle Extension (s)		3.0						3.0	3.0			
Lane Grp Cap (vph)		2570						1220	1421			
v/s Ratio Prot								0.11				
v/s Ratio Perm		0.10							c0.22			
v/c Ratio		0.17						0.42	0.40			
Uniform Delay, d1		6.2						18.2	7.3			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.1						1.1	0.8			
Delay (s)		6.4						19.2	8.1			
Level of Service		A						B	A			
Approach Delay (s)		6.4			0.0			12.1			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			10.7					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			81.6%					ICU Level of Service		D		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

19: Jackson Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Volume (vph)	232	484	368	0	0	0	0	526	28	106	117	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5						5.5		5.5	5.5	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frt		0.95						0.99		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		4775						1850		1770	1863	
Flt Permitted		0.99						1.00		0.23	1.00	
Satd. Flow (perm)		4775						1850		426	1863	
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
Adj. Flow (vph)	232	484	368	0	0	0	0	526	28	106	117	0
RTOR Reduction (vph)	0	124	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	960	0	0	0	0	0	552	0	106	117	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		34.5						29.5		29.5	29.5	
Effective Green, g (s)		34.5						29.5		29.5	29.5	
Actuated g/C Ratio		0.46						0.39		0.39	0.39	
Clearance Time (s)		5.5						5.5		5.5	5.5	
Lane Grp Cap (vph)		2196						727		167	732	
v/s Ratio Prot								c0.30			0.06	
v/s Ratio Perm		0.20								0.25		
v/c Ratio		0.44						0.76		0.63	0.16	
Uniform Delay, d1		13.7						19.7		18.4	14.7	
Progression Factor		1.00						1.00		0.69	0.71	
Incremental Delay, d2		0.6						7.3		16.8	0.5	
Delay (s)		14.3						27.0		29.5	10.8	
Level of Service		B						C		C	B	
Approach Delay (s)		14.3			0.0			27.0			19.7	
Approach LOS		B			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			18.7					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		11.0		
Intersection Capacity Utilization			90.7%					ICU Level of Service		E		
Analysis Period (min)			15									
c	Critical Lane Group											





















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	9	322	44	419	368	0	0	211	425	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			5.5	4.0	
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425	
Flt Permitted				0.95	1.00	1.00	0.63	1.00			1.00	1.00	
Satd. Flow (perm)				1593	1676	1425	1049	1676			1676	1425	
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	
Adj. Flow (vph)	0	0	0	9	322	44	419	368	0	0	211	425	
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	9	322	11	419	368	0	0	211	425	
Turn Type				Split	NA	Perm	Perm	NA			NA	Free	
Protected Phases				8	8			2			6		
Permitted Phases						8	2					Free	
Actuated Green, G (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Effective Green, g (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Actuated g/C Ratio				0.26	0.26	0.26	0.59	0.59			0.59	1.00	
Clearance Time (s)				5.5	5.5	5.5	5.5	5.5			5.5		
Lane Grp Cap (vph)				414	435	370	622	994			994	1425	
v/s Ratio Prot				0.01	c0.19			0.22			0.13		
v/s Ratio Perm						0.01	c0.40					0.30	
v/c Ratio				0.02	0.74	0.03	0.67	0.37			0.21	0.30	
Uniform Delay, d1				20.7	25.4	20.7	10.3	7.9			7.1	0.0	
Progression Factor				1.00	1.00	1.00	0.56	0.59			1.00	1.00	
Incremental Delay, d2				0.1	10.8	0.2	4.4	0.8			0.5	0.5	
Delay (s)				20.7	36.2	20.9	10.2	5.5			7.6	0.5	
Level of Service				C	D	C	B	A			A	A	
Approach Delay (s)		0.0			34.0			8.0			2.9		
Approach LOS		A			C			A			A		
Intersection Summary													
HCM 2000 Control Delay			11.6		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.69										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)						11.0		
Intersection Capacity Utilization			90.7%		ICU Level of Service						E		
Analysis Period (min)			15										
c Critical Lane Group													
















HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 			 	
Volume (vph)	32	839	410	0	0	0	0	234	108	30	281	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.98	0.85					0.96			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		4238	1226					1605			1668	
Flt Permitted		1.00	1.00					1.00			0.95	
Satd. Flow (perm)		4238	1226					1605			1592	
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
Adj. Flow (vph)	32	839	410	0	0	0	0	234	108	30	281	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	0	966	287	0	0	0	0	314	0	0	311	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		27.0	60.0					24.0			24.0	
Effective Green, g (s)		27.0	60.0					24.0			24.0	
Actuated g/C Ratio		0.45	1.00					0.40			0.40	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1907	1226					642			636	
v/s Ratio Prot		c0.23						c0.20				
v/s Ratio Perm			0.23								0.20	
v/c Ratio		0.51	0.23					0.49			0.49	
Uniform Delay, d1		11.8	0.0					13.4			13.4	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		1.0	0.4					2.7			2.7	
Delay (s)		12.7	0.4					16.1			16.1	
Level of Service		B	A					B			B	
Approach Delay (s)		10.0			0.0			16.1			16.1	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.0					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			72.2%					ICU Level of Service		C		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	539	26	0	0	0	0	0	0	747	124	0	
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		
Lane Util. Factor		0.91								0.91	0.91		
Frt		0.99								1.00	1.00		
Flt Protected		1.00								0.95	0.96		
Satd. Flow (prot)		5050								1610	3268		
Flt Permitted		1.00								0.95	0.96		
Satd. Flow (perm)		5050								1610	3268		
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	
Adj. Flow (vph)	0	539	26	0	0	0	0	0	0	747	124	0	
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	74	74	0	
Lane Group Flow (vph)	0	554	0	0	0	0	0	0	0	299	424	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		16.0								22.0	22.0		
Effective Green, g (s)		16.0								22.0	22.0		
Actuated g/C Ratio		0.35								0.48	0.48		
Clearance Time (s)		4.0								4.0	4.0		
Lane Grp Cap (vph)		1756								770	1562		
v/s Ratio Prot		c0.11											
v/s Ratio Perm										c0.19	0.13		
v/c Ratio		0.32								0.39	0.27		
Uniform Delay, d1		11.0								7.7	7.2		
Progression Factor		1.00								1.00	1.00		
Incremental Delay, d2		0.5								1.5	0.4		
Delay (s)		11.5								9.2	7.6		
Level of Service		B								A	A		
Approach Delay (s)		11.5			0.0			0.0			8.3		
Approach LOS		B			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			9.5									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.36										
Actuated Cycle Length (s)			46.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			34.8%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis















23: Madison Street & 6th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	
Volume (vph)	0	0	0	15	173	0	0	0	0	0	907	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frt					1.00						0.97	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					4559						4460	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					4559						4460	
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
Adj. Flow (vph)	0	0	0	15	173	0	0	0	0	0	907	185
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	69	0
Lane Group Flow (vph)	0	0	0	0	172	0	0	0	0	0	1023	0
Turn Type				Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases												
Actuated Green, G (s)					15.0						22.0	
Effective Green, g (s)					15.0						22.0	
Actuated g/C Ratio					0.33						0.49	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1519						2180	
v/s Ratio Prot					c0.04						c0.23	
v/s Ratio Perm												
v/c Ratio					0.11						0.47	
Uniform Delay, d1					10.4						7.6	
Progression Factor					0.89						1.00	
Incremental Delay, d2					0.1						0.7	
Delay (s)					9.4						8.4	
Level of Service					A						A	
Approach Delay (s)		0.0			9.4			0.0			8.4	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.5		HCM 2000 Level of Service					A		
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			45.0		Sum of lost time (s)				8.0			
Intersection Capacity Utilization			34.8%		ICU Level of Service				A			
Analysis Period (min)			15									
c	Critical Lane Group											





















HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	0	777	254	0	0	0	0	0	0	242	721	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		4.0									4.0			
Lane Util. Factor		0.86									0.91			
Frt		0.96									1.00			
Flt Protected		1.00									0.99			
Satd. Flow (prot)		5554									4520			
Flt Permitted		1.00									0.99			
Satd. Flow (perm)		5554									4520			
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		
Adj. Flow (vph)	0	777	254	0	0	0	0	0	0	242	721	0		
RTOR Reduction (vph)	0	86	0	0	0	0	0	0	0	0	44	0		
Lane Group Flow (vph)	0	945	0	0	0	0	0	0	0	0	919	0		
Turn Type		NA								Perm	NA			
Protected Phases		4									6			
Permitted Phases										6				
Actuated Green, G (s)		24.0									28.0			
Effective Green, g (s)		24.0									28.0			
Actuated g/C Ratio		0.40									0.47			
Clearance Time (s)		4.0									4.0			
Vehicle Extension (s)		3.0									3.0			
Lane Grp Cap (vph)		2221									2109			
v/s Ratio Prot		c0.17												
v/s Ratio Perm											0.20			
v/c Ratio		0.43									0.44			
Uniform Delay, d1		13.0									10.7			
Progression Factor		0.33									1.00			
Incremental Delay, d2		0.5									0.7			
Delay (s)		4.8									11.4			
Level of Service		A									B			
Approach Delay (s)		4.8			0.0			0.0			11.4			
Approach LOS		A			A			A			B			
Intersection Summary														
HCM 2000 Control Delay			8.0									HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio			0.43											
Actuated Cycle Length (s)			60.0								8.0		Sum of lost time (s)	
Intersection Capacity Utilization			44.8%										ICU Level of Service	A
Analysis Period (min)			15											
c	Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis

25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Volume (veh/h)	256	0	120	5	0	1	122	241	0	0	228	159
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	256	0	120	5	0	1	122	241	0	0	228	159
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											563	
pX, platoon unblocked												
vC, conflicting volume	673	792	194	719	872	120	387			241		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	673	792	194	719	872	120	387			241		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	18	100	85	98	100	100	90			100		
cM capacity (veh/h)	313	286	815	248	257	908	1168			1323		
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	256	120	122	120	120	152	235					
Volume Left	256	0	122	0	0	0	0					
Volume Right	0	120	0	0	0	0	159					
cSH	313	815	1168	1700	1700	1700	1700					
Volume to Capacity	0.82	0.15	0.10	0.07	0.07	0.09	0.14					
Queue Length 95th (ft)	171	13	9	0	0	0	0					
Control Delay (s)	52.3	10.2	8.4	0.0	0.0	0.0	0.0					
Lane LOS	F	B	A									
Approach Delay (s)	38.8		2.8			0.0						
Approach LOS	E											
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			Err%	ICU Level of Service	H							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street






















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	193	77	49	484	283	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1729		1770	1863	1863	1583
Flt Permitted	0.97		0.59	1.00	1.00	1.00
Satd. Flow (perm)	1729		1092	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	193	77	49	484	283	60
RTOR Reduction (vph)	28	0	0	0	0	23
Lane Group Flow (vph)	242	0	49	484	283	37
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	12.5		33.4	33.4	33.4	33.4
Effective Green, g (s)	12.5		33.4	33.4	33.4	33.4
Actuated g/C Ratio	0.23		0.62	0.62	0.62	0.62
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	400		676	1154	1154	980
v/s Ratio Prot	c0.14			c0.26	0.15	
v/s Ratio Perm			0.04			0.02
v/c Ratio	0.60		0.07	0.42	0.25	0.04
Uniform Delay, d1	18.5		4.1	5.3	4.6	4.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6		0.2	1.1	0.5	0.1
Delay (s)	21.1		4.3	6.4	5.1	4.1
Level of Service	C		A	A	A	A
Approach Delay (s)	21.1			6.2	4.9	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	53.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			
















HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Volume (vph)	207	854	118	0	0	0	0	487	316	4	218	0
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	
Lane Util. Factor		0.91						0.95			1.00	
Frt		0.98						0.94			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		4965						3330			1861	
Flt Permitted		0.99						1.00			0.99	
Satd. Flow (perm)		4965						3330			1835	
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
Adj. Flow (vph)	207	854	118	0	0	0	0	487	316	4	218	0
RTOR Reduction (vph)	0	30	0	0	0	0	0	72	0	0	0	0
Lane Group Flow (vph)	0	1149	0	0	0	0	0	731	0	0	222	0
Turn Type	Split	NA						NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases										6		
Actuated Green, G (s)		22.0						15.0			15.0	
Effective Green, g (s)		22.0						15.0			15.0	
Actuated g/C Ratio		0.49						0.33			0.33	
Clearance Time (s)		4.0						4.0			4.0	
Lane Grp Cap (vph)		2427						1110			611	
v/s Ratio Prot		c0.23						c0.22				
v/s Ratio Perm											0.12	
v/c Ratio		0.47						0.66			0.36	
Uniform Delay, d1		7.6						12.8			11.4	
Progression Factor		1.00						1.00			1.27	
Incremental Delay, d2		0.7						3.1			1.6	
Delay (s)		8.3						15.9			16.1	
Level of Service		A						B			B	
Approach Delay (s)		8.3			0.0			15.9			16.1	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			11.9					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			45.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			53.6%					ICU Level of Service		A		
Analysis Period (min)			15									
c	Critical Lane Group											















HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street


















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	194	80	478	134	573	0	0	0	0	
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					
Lane Util. Factor					0.91	0.91		0.95					
Frt					0.93	0.85		1.00					
Flt Protected					0.98	1.00		0.99					
Satd. Flow (prot)					2785	1297		3155					
Flt Permitted					0.98	1.00		0.99					
Satd. Flow (perm)					2785	1297		3155					
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	
Adj. Flow (vph)	0	0	0	194	80	478	134	573	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	57	57	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	456	182	0	707	0	0	0	0	
Turn Type				Split	NA	Perm	Split	NA					
Protected Phases				8	8		2	2					
Permitted Phases						8							
Actuated Green, G (s)					22.0	22.0		15.0					
Effective Green, g (s)					22.0	22.0		15.0					
Actuated g/C Ratio					0.49	0.49		0.33					
Clearance Time (s)					4.0	4.0		4.0					
Lane Grp Cap (vph)					1361	634		1051					
v/s Ratio Prot					c0.16			c0.22					
v/s Ratio Perm						0.14							
v/c Ratio					0.33	0.29		0.67					
Uniform Delay, d1					7.0	6.8		12.9					
Progression Factor					1.00	1.00		0.76					
Incremental Delay, d2					0.7	1.1		2.7					
Delay (s)					7.7	8.0		12.6					
Level of Service					A	A		B					
Approach Delay (s)		0.0			7.8			12.6			0.0		
Approach LOS		A			A			B			A		
Intersection Summary													
HCM 2000 Control Delay			10.1		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.47										
Actuated Cycle Length (s)			45.0		Sum of lost time (s)						8.0		
Intersection Capacity Utilization			50.5%		ICU Level of Service						A		
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street

































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	758	0	0	0	0	0	919	189	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.97				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5728						4460				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5728						4460				
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
Adj. Flow (vph)	118	758	0	0	0	0	0	919	189	0	0	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	52	0	0	0	0
Lane Group Flow (vph)	0	849	0	0	0	0	0	1056	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		27.0						24.0				
Effective Green, g (s)		27.0						24.0				
Actuated g/C Ratio		0.45						0.40				
Clearance Time (s)		4.5						4.5				
Lane Grp Cap (vph)		2577						1784				
v/s Ratio Prot								c0.24				
v/s Ratio Perm		0.15										
v/c Ratio		0.33						0.59				
Uniform Delay, d1		10.7						14.1				
Progression Factor		0.69						1.00				
Incremental Delay, d2		0.3						1.5				
Delay (s)		7.7						15.6				
Level of Service		A						B				
Approach Delay (s)		7.7			0.0			15.6			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.1					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)			9.0	
Intersection Capacity Utilization			71.5%					ICU Level of Service			C	
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	44	338	5	1	242	309	9	1	3	340	2	46
Peak Hour 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
Hourly flow rate (vph)	44	338	5	1	242	309	9	1	3	340	2	46
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	387	243	309	13	388							
Volume Left (vph)	44	1	0	9	340							
Volume Right (vph)	5	0	309	3	46							
Hadj (s)	0.05	0.04	-0.67	0.03	0.14							
Departure Headway (s)	6.3	6.6	5.9	7.6	6.4							
Degree Utilization, x	0.68	0.45	0.51	0.03	0.69							
Capacity (veh/h)	387	518	586	379	388							
Control Delay (s)	21.4	13.7	13.7	10.8	22.8							
Approach Delay (s)	21.4	13.7		10.8	22.8							
Approach LOS	C	B		B	C							
Intersection Summary												
Delay			18.5									
Level of Service			C									
Intersection Capacity Utilization			70.5%	ICU Level of Service	C							
Analysis Period (min)			15									





























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	 	 	 	 		 	 		 	 	 	
Volume (vph)	179	160	44	57	200	39	31	495	45	87	794	161	
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	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3453		1770	3495		1770	3539	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3453		1770	3495		1770	3539	1583	
Peak-hour factor, 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)	195	174	48	62	217	42	34	538	49	95	863	175	
RTOR Reduction (vph)	0	0	37	0	17	0	0	6	0	0	0	152	
Lane Group Flow (vph)	195	174	11	62	242	0	34	581	0	95	863	23	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over	
Protected Phases	7	4		3	8		5	2		1	6	7	
Permitted Phases			4										
Actuated Green, G (s)	9.3	16.3	16.3	5.0	12.0		2.9	26.1		7.4	30.6	9.3	
Effective Green, g (s)	9.3	16.3	16.3	5.0	12.0		2.9	26.1		7.4	30.6	9.3	
Actuated g/C Ratio	0.13	0.23	0.23	0.07	0.17		0.04	0.37		0.10	0.43	0.13	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	450	814	364	125	585		72	1288		185	1529	207	
v/s Ratio Prot	c0.06	0.05		0.04	c0.07		0.02	0.17		c0.05	c0.24	0.01	
v/s Ratio Perm			0.01										
v/c Ratio	0.43	0.21	0.03	0.50	0.41		0.47	0.45		0.51	0.56	0.11	
Uniform Delay, d1	28.3	22.1	21.1	31.7	26.3		33.2	16.9		30.0	15.1	27.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.7	0.1	0.0	3.1	0.5		4.8	1.1		2.4	1.5	0.2	
Delay (s)	29.0	22.2	21.2	34.8	26.7		38.0	18.1		32.4	16.6	27.3	
Level of Service	C	C	C	C	C		D	B		C	B	C	
Approach Delay (s)		25.3			28.3			19.2			19.6		
Approach LOS		C			C			B			B		
Intersection Summary													
HCM 2000 Control Delay			21.6									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.53										
Actuated Cycle Length (s)			70.8									Sum of lost time (s)	16.0
Intersection Capacity Utilization			50.5%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue


















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 		 	 		 	 		
Volume (vph)	101	141	99	50	134	95	84	547	38	125	1109	115	
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	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00	
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3320		1770	3320		3433	3539	1583	3433	3539	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	3320		1770	3320		3433	3539	1583	3433	3539	1583	
Peak-hour factor, 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)	110	153	108	54	146	103	91	595	41	136	1205	125	
RTOR Reduction (vph)	0	87	0	0	88	0	0	0	25	0	0	61	
Lane Group Flow (vph)	110	174	0	54	161	0	91	595	16	136	1205	64	
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases									2			6	
Actuated Green, G (s)	7.6	12.4		4.6	9.4		5.6	25.5	25.5	6.3	26.2	26.2	
Effective Green, g (s)	7.6	12.4		4.6	9.4		5.6	25.5	25.5	6.3	26.2	26.2	
Actuated g/C Ratio	0.12	0.19		0.07	0.15		0.09	0.39	0.39	0.10	0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	207	635		125	481		296	1392	622	333	1430	640	
v/s Ratio Prot	c0.06	c0.05		0.03	0.05		0.03	0.17		c0.04	c0.34		
v/s Ratio Perm									0.01			0.04	
v/c Ratio	0.53	0.27		0.43	0.33		0.31	0.43	0.03	0.41	0.84	0.10	
Uniform Delay, d1	26.9	22.4		28.8	24.9		27.8	14.3	12.0	27.5	17.4	12.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	0.2		2.4	0.4		0.6	1.0	0.1	0.8	6.2	0.3	
Delay (s)	29.5	22.6		31.2	25.3		28.4	15.3	12.1	28.3	23.6	12.3	
Level of Service	C	C		C	C		C	B	B	C	C	B	
Approach Delay (s)		24.6			26.4			16.7			23.1		
Approach LOS		C			C			B			C		
Intersection Summary													
HCM 2000 Control Delay			22.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.64										
Actuated Cycle Length (s)			64.8									Sum of lost time (s)	16.0
Intersection Capacity Utilization			59.7%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

Level Of Service Computation Report

Cumulative Year 2035 No Project Conditions
AM Peak Hour

















HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	73	20	13	267	33	47	11	3	31	56	96
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	24	73	20	13	267	33	47	11	3	31	56	96
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	300			93			414	457	46	402	450	150
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	300			93			414	457	46	402	450	150
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			89	98	100	94	89	89
cM capacity (veh/h)	1258			1499			415	485	1013	511	489	870
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	60	56	146	166	61	31	37	115				
Volume Left	24	0	13	0	47	31	0	0				
Volume Right	0	20	0	33	3	0	0	96				
cSH	1258	1700	1499	1700	439	511	489	772				
Volume to Capacity	0.02	0.03	0.01	0.10	0.14	0.06	0.08	0.15				
Queue Length 95th (ft)	1	0	1	0	12	5	6	13				
Control Delay (s)	3.2	0.0	0.7	0.0	14.5	12.5	13.0	10.5				
Lane LOS	A		A		B	B	B	B				
Approach Delay (s)	1.7		0.3		14.5	11.3						
Approach LOS					B	B						
Intersection Summary												
Average Delay			4.8									
Intersection Capacity Utilization			33.5%		ICU Level of Service			A				
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	4	187	10	0	0	0	0	61	20	63	201	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						4.5		4.5	4.5		
Lane Util. Factor		0.91						0.95		1.00	0.91		
Frt		0.99						0.96		1.00	1.00		
Flt Protected		1.00						1.00		0.95	1.00		
Satd. Flow (prot)		5042						3408		1770	5085		
Flt Permitted		1.00						1.00		0.70	1.00		
Satd. Flow (perm)		5042						3408		1307	5085		
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	
Adj. Flow (vph)	4	187	10	0	0	0	0	61	20	63	201	0	
RTOR Reduction (vph)	0	4	0	0	0	0	0	15	0	0	0	0	
Lane Group Flow (vph)	0	197	0	0	0	0	0	66	0	63	201	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		45.5						19.5		19.5	19.5		
Effective Green, g (s)		45.5						19.5		19.5	19.5		
Actuated g/C Ratio		0.61						0.26		0.26	0.26		
Clearance Time (s)		5.5						4.5		4.5	4.5		
Vehicle Extension (s)		3.0						3.0		3.0	3.0		
Lane Grp Cap (vph)		3058						886		339	1322		
v/s Ratio Prot								0.02			0.04		
v/s Ratio Perm		0.04								c0.05			
v/c Ratio		0.06						0.07		0.19	0.15		
Uniform Delay, d1		6.0						20.9		21.6	21.4		
Progression Factor		1.00						1.21		0.62	0.64		
Incremental Delay, d2		0.0						0.2		1.2	0.2		
Delay (s)		6.1						25.6		14.7	13.9		
Level of Service		A						C		B	B		
Approach Delay (s)		6.1			0.0			25.6			14.1		
Approach LOS		A			A			C			B		
Intersection Summary													
HCM 2000 Control Delay			12.8									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.10										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			29.0%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	0	0	0	92	259	245	11	24	55	0	0	166	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95	
Frt					1.00	0.85		1.00	1.00			1.00	
Flt Protected					0.99	1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3493	1583		1770	1863			3539	
Flt Permitted					0.99	1.00		0.65	1.00			1.00	
Satd. Flow (perm)					3493	1583		1205	1863			3539	
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	
Adj. Flow (vph)	0	0	0	92	259	245	11	24	55	0	0	166	
RTOR Reduction (vph)	0	0	0	0	0	198	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	351	47	0	35	55	0	0	166	
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA	
Protected Phases					8				2			6	
Permitted Phases				8		8	2	2					
Actuated Green, G (s)					14.3	14.3		51.7	51.7			51.7	
Effective Green, g (s)					14.3	14.3		51.7	51.7			51.7	
Actuated g/C Ratio					0.19	0.19		0.69	0.69			0.69	
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5	
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					665	301		830	1284			2439	
v/s Ratio Prot									0.03			c0.05	
v/s Ratio Perm					0.10	0.03		0.03					
v/c Ratio					0.53	0.16		0.04	0.04			0.07	
Uniform Delay, d1					27.3	25.3		3.7	3.7			3.8	
Progression Factor					0.84	0.55		0.63	0.61			0.82	
Incremental Delay, d2					0.8	0.2		0.1	0.1			0.1	
Delay (s)					23.8	14.2		2.5	2.3			3.2	
Level of Service					C	B		A	A			A	
Approach Delay (s)		0.0			19.8				2.4			3.2	
Approach LOS		A			B				A			A	
Intersection Summary													
HCM 2000 Control Delay			13.9		HCM 2000 Level of Service					B			
HCM 2000 Volume to Capacity ratio			0.17										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					9.0			
Intersection Capacity Utilization			29.0%		ICU Level of Service					A			
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

























3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	62
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	62
RTOR Reduction (vph)	19
Lane Group Flow (vph)	43
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	51.7
Effective Green, g (s)	51.7
Actuated g/C Ratio	0.69
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1091
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.04
Uniform Delay, d1	3.7
Progression Factor	0.82
Incremental Delay, d2	0.1
Delay (s)	3.1
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	339	37	48	749	46	137	170	14	50	95	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5010		1770	5041		1770	1841		1770	3539	1583
Flt Permitted	0.24	1.00		0.52	1.00		0.69	1.00		0.64	1.00	1.00
Satd. Flow (perm)	451	5010		969	5041		1290	1841		1195	3539	1583
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
Adj. Flow (vph)	53	339	37	48	749	46	137	170	14	50	95	94
RTOR Reduction (vph)	0	24	0	0	13	0	0	3	0	0	0	37
Lane Group Flow (vph)	53	352	0	48	782	0	137	181	0	50	95	57
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	19.8	19.8		19.8	19.8		45.7	45.7		45.7	45.7	45.7
Effective Green, g (s)	19.8	19.8		19.8	19.8		45.7	45.7		45.7	45.7	45.7
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.61	0.61		0.61	0.61	0.61
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	119	1322		255	1330		786	1121		728	2156	964
v/s Ratio Prot		0.07			c0.16			0.10				0.03
v/s Ratio Perm	0.12			0.05			c0.11			0.04		0.04
v/c Ratio	0.45	0.27		0.19	0.59		0.17	0.16		0.07	0.04	0.06
Uniform Delay, d1	23.0	21.8		21.4	24.0		6.4	6.3		6.0	5.9	5.9
Progression Factor	1.00	1.00		1.00	1.00		0.75	0.74		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1		0.4	0.7		0.5	0.3		0.2	0.0	0.1
Delay (s)	25.7	22.0		21.7	24.7		5.3	5.0		6.2	5.9	6.1
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		22.4			24.5			5.1			6.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			18.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.30									
Actuated Cycle Length (s)			75.0			Sum of lost time (s)			9.5			
Intersection Capacity Utilization			47.8%			ICU Level of Service			A			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street



















Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations						
Volume (vph)	159	883	471	31	92	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	0.99		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5427	4534		2959	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5427	4534		2959	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	159	883	471	31	92	69
RTOR Reduction (vph)	75	34	6	0	0	0
Lane Group Flow (vph)	68	865	496	0	161	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	55.0	55.0	24.0		21.0	
Effective Green, g (s)	55.0	55.0	24.0		21.0	
Actuated g/C Ratio	0.48	0.48	0.21		0.18	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	616	2595	946		540	
v/s Ratio Prot	0.05	c0.16	c0.11		c0.05	
v/s Ratio Perm						
v/c Ratio	0.11	0.33	0.52		0.30	
Uniform Delay, d1	16.5	18.6	40.4		40.6	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.3	2.1		0.3	
Delay (s)	16.9	19.0	42.5		40.9	
Level of Service	B	B	D		D	
Approach Delay (s)		18.7	42.5		40.9	
Approach LOS		B	D		D	

Intersection Summary

















HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	0	239	289	43	559	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5	5.0	5.0					
Lane Util. Factor					0.91	0.91	0.81	0.81					
Frt					0.95	0.85	1.00	1.00					
Flt Protected					1.00	1.00	0.95	1.00					
Satd. Flow (prot)					2895	1297	1290	5430					
Flt Permitted					1.00	1.00	0.95	1.00					
Satd. Flow (perm)					2895	1297	1290	5430					
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	
Adj. Flow (vph)	0	0	0	0	239	289	43	559	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	52	63	25	9	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	311	102	14	554	0	0	0	0	
Turn Type					NA	Perm	Perm	NA					
Protected Phases					8			2					
Permitted Phases						8	2						
Actuated Green, G (s)					64.0	64.0	41.5	41.5					
Effective Green, g (s)					64.0	64.0	41.5	41.5					
Actuated g/C Ratio					0.56	0.56	0.36	0.36					
Clearance Time (s)					4.5	4.5	5.0	5.0					
Vehicle Extension (s)					3.0	3.0	3.0	3.0					
Lane Grp Cap (vph)					1611	721	465	1959					
v/s Ratio Prot					c0.11								
v/s Ratio Perm						0.08	0.01	0.10					
v/c Ratio					0.19	0.14	0.03	0.28					
Uniform Delay, d1					12.7	12.3	23.7	26.2					
Progression Factor					1.00	1.00	1.96	1.18					
Incremental Delay, d2					0.3	0.4	0.1	0.3					
Delay (s)					12.9	12.7	46.7	31.3					
Level of Service					B	B	D	C					
Approach Delay (s)		0.0			12.9			32.3			0.0		
Approach LOS		A			B			C			A		
Intersection Summary													
HCM 2000 Control Delay			23.2		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.23										
Actuated Cycle Length (s)			115.0		Sum of lost time (s)				9.5				
Intersection Capacity Utilization			46.3%		ICU Level of Service				A				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis
 7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	30	4	8	85	92	3	7	0	320	102	66
Peak Hour 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
Hourly flow rate (vph)	7	30	4	8	85	92	3	7	0	320	102	66
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	41	185	10	371	117							
Volume Left (vph)	7	8	3	320	0							
Volume Right (vph)	4	92	0	0	66							
Hadj (s)	0.01	-0.26	0.09	0.47	-0.36							
Departure Headway (s)	5.4	4.9	5.3	5.6	4.7							
Degree Utilization, x	0.06	0.25	0.01	0.57	0.15							
Capacity (veh/h)	608	682	630	629	737							
Control Delay (s)	8.8	9.6	8.4	14.6	7.4							
Approach Delay (s)	8.8	9.6	8.4	12.9								
Approach LOS	A	A	A	B								
Intersection Summary												
Delay			11.8									
Level of Service			B									
Intersection Capacity Utilization			42.3%	ICU Level of Service	A							
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (veh/h)	6	2	2	7	22	26	16	337	33	103	369	48	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour 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	
Hourly flow rate (vph)	6	2	2	7	22	26	16	337	33	103	369	48	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None						
Median storage (veh)													
Upstream signal (ft)												288	
pX, platoon unblocked													
vC, conflicting volume	836	1001	208	779	1008	185	417					370	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	836	1001	208	779	1008	185	417					370	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1					4.1	
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2	
p0 queue free %	97	99	100	97	90	97	99					91	
cM capacity (veh/h)	214	217	797	262	215	826	1138					1185	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2							
Volume Total	10	55	184	202	288	232							
Volume Left	6	7	16	0	103	0							
Volume Right	2	26	0	33	0	48							
cSH	252	343	1138	1700	1185	1700							
Volume to Capacity	0.04	0.16	0.01	0.12	0.09	0.14							
Queue Length 95th (ft)	3	14	1	0	7	0							
Control Delay (s)	19.9	17.5	0.8	0.0	3.5	0.0							
Lane LOS	C	C	A		A								
Approach Delay (s)	19.9	17.5	0.4		1.9								
Approach LOS	C	C											
Intersection Summary													
Average Delay			2.4										
Intersection Capacity Utilization			38.9%	ICU Level of Service	A								
Analysis Period (min)			15										























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	33	21	5	51	45	34	326	30	101	333	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.94			0.94			0.99			0.96	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1754			1746			3483			3363	
Flt Permitted	0.69	1.00			0.99			0.88			0.81	
Satd. Flow (perm)	1288	1754			1737			3073			2755	
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
Adj. Flow (vph)	34	33	21	5	51	45	34	326	30	101	333	168
RTOR Reduction (vph)	0	12	0	0	26	0	0	8	0	0	54	0
Lane Group Flow (vph)	34	42	0	0	75	0	0	382	0	0	548	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	549	748			741			1393			1248	
v/s Ratio Prot		0.02										
v/s Ratio Perm	0.03				c0.04			0.12			c0.20	
v/c Ratio	0.06	0.06			0.10			0.27			0.44	
Uniform Delay, d1	12.7	12.6			12.9			12.8			14.0	
Progression Factor	1.00	1.00			1.00			1.00			0.74	
Incremental Delay, d2	0.2	0.1			0.3			0.5			1.1	
Delay (s)	12.9	12.8			13.2			13.3			11.5	
Level of Service	B	B			B			B			B	
Approach Delay (s)		12.8			13.2			13.3			11.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.3					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.28									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			49.1%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 			
Volume (vph)	931	177	99	0	0	0	0	305	513	548	320	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00		
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1610	3272	1583					3539	1583	3433	1863		
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1610	3272	1583					3539	1583	3433	1863		
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	
Adj. Flow (vph)	931	177	99	0	0	0	0	305	513	548	320	0	
RTOR Reduction (vph)	0	0	70	0	0	0	0	0	179	0	0	0	
Lane Group Flow (vph)	465	643	29	0	0	0	0	305	334	548	320	0	
Turn Type	Split	NA	Prot					NA	Prot	Prot	NA		
Protected Phases	4	4	4					2	2	1	6		
Permitted Phases													
Actuated Green, G (s)	21.6	21.6	21.6					23.5	23.5	16.4	43.4		
Effective Green, g (s)	21.6	21.6	21.6					23.5	23.5	16.4	43.4		
Actuated g/C Ratio	0.29	0.29	0.29					0.31	0.31	0.22	0.58		
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	463	942	455					1108	496	750	1078		
v/s Ratio Prot	c0.29	0.20	0.02					0.09	c0.21	c0.16	0.17		
v/s Ratio Perm													
v/c Ratio	1.00	0.96dl	0.06					0.28	0.67	0.73	0.30		
Uniform Delay, d1	26.7	23.7	19.4					19.4	22.4	27.2	8.0		
Progression Factor	0.95	0.95	0.87					1.22	1.45	1.19	1.58		
Incremental Delay, d2	42.9	2.1	0.1					0.6	7.1	3.6	0.2		
Delay (s)	68.2	24.5	16.9					24.3	39.7	36.0	12.8		
Level of Service	E	C	B					C	D	D	B		
Approach Delay (s)		40.7			0.0			34.0			27.5		
Approach LOS		D			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			34.8									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.80										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			109.3%									ICU Level of Service	H
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													


















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	294	156	533	64	463	0	0	354	46	
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		
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91		
Frt				1.00	1.00	0.85	1.00	1.00			0.98		
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1593	3185	1425	1593	3185			4498		
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (perm)				1593	3185	1425	1593	3185			4498		
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	
Adj. Flow (vph)	0	0	0	294	156	533	64	463	0	0	354	46	
RTOR Reduction (vph)	0	0	0	0	0	227	0	0	0	0	19	0	
Lane Group Flow (vph)	0	0	0	294	156	306	64	463	0	0	381	0	
Turn Type				Split	NA	Prot	Prot	NA			NA		
Protected Phases				8	8	8	5	2			6		
Permitted Phases													
Actuated Green, G (s)				27.0	27.0	27.0	11.4	40.0			24.6		
Effective Green, g (s)				27.0	27.0	27.0	11.4	40.0			24.6		
Actuated g/C Ratio				0.36	0.36	0.36	0.15	0.53			0.33		
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0		
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0		
Lane Grp Cap (vph)				573	1146	513	242	1698			1475		
v/s Ratio Prot				0.18	0.05	c0.21	0.04	c0.15			0.08		
v/s Ratio Perm													
v/c Ratio				0.51	0.14	0.60	0.26	0.27			0.26		
Uniform Delay, d1				18.8	16.2	19.6	28.1	9.6			18.5		
Progression Factor				1.00	1.00	1.00	0.60	0.76			1.00		
Incremental Delay, d2				0.8	0.1	1.9	0.4	0.3			0.4		
Delay (s)				19.6	16.2	21.4	17.4	7.5			18.9		
Level of Service				B	B	C	B	A			B		
Approach Delay (s)		0.0			20.1			8.7			18.9		
Approach LOS		A			C			A			B		
Intersection Summary													
HCM 2000 Control Delay			16.7	HCM 2000 Level of Service							B		
HCM 2000 Volume to Capacity ratio			0.43										
Actuated Cycle Length (s)			75.0	Sum of lost time (s)						12.0			
Intersection Capacity Utilization			109.3%	ICU Level of Service							H		
Analysis Period (min)			15										
c Critical Lane Group													


















HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	632	125	0	0	0	0	410	78	105	529	0
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	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.98		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4550	1425					3109		1593	3185	
Flt Permitted		0.99	1.00					1.00		0.43	1.00	
Satd. Flow (perm)		4550	1425					3109		716	3185	
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
Adj. Flow (vph)	84	632	125	0	0	0	0	410	78	105	529	0
RTOR Reduction (vph)	0	0	77	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	716	48	0	0	0	0	463	0	105	529	0
Turn Type	Split	NA	Perm					NA		pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			4							6		
Actuated Green, G (s)		23.0	23.0					21.0		29.0	29.0	
Effective Green, g (s)		23.0	23.0					21.0		29.0	29.0	
Actuated g/C Ratio		0.38	0.38					0.35		0.48	0.48	
Clearance Time (s)		4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		1744	546					1088		404	1539	
v/s Ratio Prot		c0.16						c0.15		0.02	c0.17	
v/s Ratio Perm			0.03							0.11		
v/c Ratio		0.41	0.09					0.43		0.26	0.34	
Uniform Delay, d1		13.5	11.8					14.9		10.8	9.6	
Progression Factor		1.00	1.00					1.00		0.49	0.48	
Incremental Delay, d2		0.2	0.1					1.2		0.3	0.6	
Delay (s)		13.7	11.9					16.1		5.6	5.2	
Level of Service		B	B					B		A	A	
Approach Delay (s)		13.4			0.0			16.1			5.2	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			11.4					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		12.0		
Intersection Capacity Utilization			53.7%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												





















HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	145	500	106	93	367	0	0	471	42
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	
Lane Util. Factor					0.95		1.00	0.95			0.91	
Flt					0.98		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3088		1593	3185			4521	
Flt Permitted					0.99		0.43	1.00			1.00	
Satd. Flow (perm)					3088		728	3185			4521	
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
Adj. Flow (vph)	0	0	0	145	500	106	93	367	0	0	471	42
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	0	729	0	93	367	0	0	496	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					26.0		26.0	26.0			18.0	
Effective Green, g (s)					26.0		26.0	26.0			18.0	
Actuated g/C Ratio					0.43		0.43	0.43			0.30	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)					1338		373	1380			1356	
v/s Ratio Prot					c0.24		0.02	c0.12			c0.11	
v/s Ratio Perm							0.09					
v/c Ratio					0.54		0.25	0.27			0.37	
Uniform Delay, d1					12.6		11.6	10.9			16.5	
Progression Factor					1.00		0.29	0.34			1.91	
Incremental Delay, d2					1.6		1.5	0.4			0.7	
Delay (s)					14.2		4.8	4.2			32.2	
Level of Service					B		A	A			C	
Approach Delay (s)		0.0			14.2			4.3			32.2	
Approach LOS		A			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			16.9		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			60.0		Sum of lost time (s)						12.0	
Intersection Capacity Utilization			53.7%		ICU Level of Service						A	
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	3	278	79	1	327	111	0	362	24	0	642	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frt		0.97			0.96			0.99			0.98	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3079			3064			3156			3124	
Flt Permitted		0.95			0.95			1.00			1.00	
Satd. Flow (perm)		2931			2924			3156			3124	
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
Adj. Flow (vph)	3	278	79	1	327	111	0	362	24	0	642	95
RTOR Reduction (vph)	0	43	0	0	55	0	0	8	0	0	20	0
Lane Group Flow (vph)	0	317	0	0	384	0	0	378	0	0	718	0
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.5			21.5			27.5			27.5	
Effective Green, g (s)		21.5			21.5			27.5			27.5	
Actuated g/C Ratio		0.36			0.36			0.46			0.46	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Lane Grp Cap (vph)		1050			1047			1446			1431	
v/s Ratio Prot								0.12			c0.23	
v/s Ratio Perm		0.11			c0.13							
v/c Ratio		0.30			0.37			0.26			0.50	
Uniform Delay, d1		13.9			14.2			10.0			11.4	
Progression Factor		1.00			1.00			1.34			1.00	
Incremental Delay, d2		0.7			1.0			0.4			1.3	
Delay (s)		14.6			15.2			13.8			12.7	
Level of Service		B			B			B			B	
Approach Delay (s)		14.6			15.2			13.8			12.7	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.9								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			47.0%								ICU Level of Service	A
Analysis Period (min)			15									
c Critical Lane Group												
















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	26	15	5	21	0	0	0	0	14	7	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	26	15	5	21	0	0	0	0	14	7	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	21			41			80	64	34	64	72	21
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	21			41			80	64	34	64	72	21
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	99	99
cM capacity (veh/h)	1595			1568			890	824	1040	927	816	1056
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	41	26	18	16								
Volume Left	0	5	14	0								
Volume Right	15	0	0	12								
cSH	1700	1568	903	991								
Volume to Capacity	0.02	0.00	0.02	0.02								
Queue Length 95th (ft)	0	0	1	1								
Control Delay (s)	0.0	1.4	9.1	8.7								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.4	8.9									
Approach LOS			A									
Intersection Summary												
Average Delay			3.3									
Intersection Capacity Utilization			15.4%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	21	13	8	23	0	0	0	0	7	3	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	21	13	8	23	0	0	0	0	7	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked												
vC, conflicting volume	23			34			70	66	28	66	73	23
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	23			34			70	66	28	66	73	23
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	100	100
cM capacity (veh/h)	1592			1578			914	820	1048	923	813	1054
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	34	31	8	4								
Volume Left	0	8	7	0								
Volume Right	13	0	0	2								
cSH	1700	1578	902	935								
Volume to Capacity	0.02	0.01	0.01	0.00								
Queue Length 95th (ft)	0	0	1	0								
Control Delay (s)	0.0	1.9	9.0	8.9								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.9	9.0									
Approach LOS			A									
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			18.2%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
















17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	41	103	118	32	12	28
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	41	103	118	32	12	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		116	82	185	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		116	82	185	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	97		85	96	98	97
cM capacity (veh/h)	1623		811	788	691	1085
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total	41	103	150	12	28	
Volume Left	41	0	118	0	0	
Volume Right	0	103	0	0	28	
cSH	1623	1700	806	691	1085	
Volume to Capacity	0.03	0.06	0.19	0.02	0.03	
Queue Length 95th (ft)	2	0	17	1	2	
Control Delay (s)	7.3	0.0	10.5	10.3	8.4	
Lane LOS	A		B	B	A	
Approach Delay (s)	2.1		10.5	9.0		
Approach LOS			B	A		
Intersection Summary						
Average Delay			6.7			
Intersection Capacity Utilization			24.9%	ICU Level of Service	A	
Analysis Period (min)			15			

















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	691	0	0	0	0	0	607	1356	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0	5.0			
Lane Util. Factor		0.91						0.91	0.88			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4533						4577	2508			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4533						4577	2508			
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
Adj. Flow (vph)	165	691	0	0	0	0	0	607	1356	0	0	0
RTOR Reduction (vph)	0	67	0	0	0	0	0	0	131	0	0	0
Lane Group Flow (vph)	0	789	0	0	0	0	0	607	1225	0	0	0
Turn Type	Perm	NA						NA	custom			
Protected Phases		2						1				
Permitted Phases	2								5			
Actuated Green, G (s)		27.0						23.0	29.0			
Effective Green, g (s)		27.0						23.0	29.0			
Actuated g/C Ratio		0.45						0.38	0.48			
Clearance Time (s)		5.0						5.0	5.0			
Vehicle Extension (s)		3.0						3.0	3.0			
Lane Grp Cap (vph)		2039						1754	1212			
v/s Ratio Prot								0.13				
v/s Ratio Perm		0.17							c0.49			
v/c Ratio		0.39						0.35	1.01			
Uniform Delay, d1		11.0						13.2	15.5			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.6						0.5	28.5			
Delay (s)		11.5						13.7	44.0			
Level of Service		B						B	D			
Approach Delay (s)		11.5			0.0			34.6			0.0	
Approach LOS		B			A			C			A	
Intersection Summary												
HCM 2000 Control Delay			27.6					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			99.2%					ICU Level of Service		F		
Analysis Period (min)			15									
c	Critical Lane Group											




















HCM Signalized Intersection Capacity Analysis

19: Jackson Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	438	446	0	0	0	0	212	41	66	69	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5						5.5		5.5	5.5	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frt		0.94						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		4739						1822		1770	1863	
Flt Permitted		0.99						1.00		0.56	1.00	
Satd. Flow (perm)		4739						1822		1048	1863	
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
Adj. Flow (vph)	311	438	446	0	0	0	0	212	41	66	69	0
RTOR Reduction (vph)	0	144	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	1051	0	0	0	0	0	244	0	66	69	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		34.5						29.5		29.5	29.5	
Effective Green, g (s)		34.5						29.5		29.5	29.5	
Actuated g/C Ratio		0.46						0.39		0.39	0.39	
Clearance Time (s)		5.5						5.5		5.5	5.5	
Lane Grp Cap (vph)		2179						716		412	732	
v/s Ratio Prot								c0.13			0.04	
v/s Ratio Perm		0.22								0.06		
v/c Ratio		0.48						0.34		0.16	0.09	
Uniform Delay, d1		14.1						15.9		14.7	14.3	
Progression Factor		1.00						1.00		0.68	0.70	
Incremental Delay, d2		0.8						1.3		0.8	0.3	
Delay (s)		14.8						17.2		10.8	10.3	
Level of Service		B						B		B	B	
Approach Delay (s)		14.8			0.0			17.2			10.5	
Approach LOS		B			A			B			B	
Intersection Summary												
HCM 2000 Control Delay		14.8										B
HCM 2000 Volume to Capacity ratio		0.42										
Actuated Cycle Length (s)		75.0								11.0		
Intersection Capacity Utilization		74.7%										D
Analysis Period (min)		15										
c Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	2	311	56	274	281	0	0	176	1408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			5.5	4.0
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425
Flt Permitted				0.95	1.00	1.00	0.65	1.00			1.00	1.00
Satd. Flow (perm)				1593	1676	1425	1083	1676			1676	1425
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
Adj. Flow (vph)	0	0	0	2	311	56	274	281	0	0	176	1408
RTOR Reduction (vph)	0	0	0	0	0	41	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	2	311	15	274	281	0	0	176	1408
Turn Type				Split	NA	Perm	Perm	NA			NA	Free
Protected Phases				8	8			2			6	
Permitted Phases						8	2					Free
Actuated Green, G (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0
Effective Green, g (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0
Actuated g/C Ratio				0.26	0.26	0.26	0.59	0.59			0.59	1.00
Clearance Time (s)				5.5	5.5	5.5	5.5	5.5			5.5	
Lane Grp Cap (vph)				414	435	370	642	994			994	1425
v/s Ratio Prot				0.00	0.19			0.17			0.10	
v/s Ratio Perm						0.01	0.25					c0.99
v/c Ratio				0.00	0.71	0.04	0.43	0.28			0.18	0.99
Uniform Delay, d1				20.6	25.2	20.7	8.3	7.5			6.9	0.0
Progression Factor				1.00	1.00	1.00	1.30	1.29			1.00	1.00
Incremental Delay, d2				0.0	9.7	0.2	1.9	0.7			0.4	21.2
Delay (s)				20.6	34.9	20.9	12.7	10.2			7.3	21.2
Level of Service				C	C	C	B	B			A	C
Approach Delay (s)		0.0			32.7			11.5			19.6	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			19.7		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			1.16									
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					11.0		
Intersection Capacity Utilization			74.7%		ICU Level of Service					D		
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	529	1308	0	0	0	0	354	90	28	356	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.92	0.85					0.97			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		3972	1226					1631			1670	
Flt Permitted		1.00	1.00					1.00			0.96	
Satd. Flow (perm)		3972	1226					1631			1605	
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
Adj. Flow (vph)	38	529	1308	0	0	0	0	354	90	28	356	0
RTOR Reduction (vph)	0	316	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	905	654	0	0	0	0	429	0	0	384	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		19.0	60.0					32.0			32.0	
Effective Green, g (s)		19.0	60.0					32.0			32.0	
Actuated g/C Ratio		0.32	1.00					0.53			0.53	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1257	1226					869			856	
v/s Ratio Prot		c0.23						0.26				
v/s Ratio Perm			c0.53								0.24	
v/c Ratio		0.88dr	0.53					0.49			0.45	
Uniform Delay, d1		18.1	0.0					8.9			8.6	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		3.6	1.7					2.0			1.7	
Delay (s)		21.7	1.7					10.9			10.3	
Level of Service		C	A					B			B	
Approach Delay (s)		14.7			0.0			10.9			10.3	
Approach LOS		B			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.5					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			77.1%					ICU Level of Service		D		
Analysis Period (min)			15									
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												



















HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  								  	  		
Volume (vph)	0	547	22	0	0	0	0	0	0	589	105	0	
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		
Lane Util. Factor		0.91								0.91	0.91		
Frt		0.99								1.00	1.00		
Flt Protected		1.00								0.95	0.96		
Satd. Flow (prot)		5056								1610	3270		
Flt Permitted		1.00								0.95	0.96		
Satd. Flow (perm)		5056								1610	3270		
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	
Adj. Flow (vph)	0	547	22	0	0	0	0	0	0	589	105	0	
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	71	71	0	
Lane Group Flow (vph)	0	560	0	0	0	0	0	0	0	223	329	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		16.0								22.0	22.0		
Effective Green, g (s)		16.0								22.0	22.0		
Actuated g/C Ratio		0.35								0.48	0.48		
Clearance Time (s)		4.0								4.0	4.0		
Lane Grp Cap (vph)		1758								770	1563		
v/s Ratio Prot		c0.11											
v/s Ratio Perm										c0.14	0.10		
v/c Ratio		0.32								0.29	0.21		
Uniform Delay, d1		11.0								7.3	7.0		
Progression Factor		1.00								1.00	1.00		
Incremental Delay, d2		0.5								0.9	0.3		
Delay (s)		11.5								8.2	7.3		
Level of Service		B								A	A		
Approach Delay (s)		11.5			0.0			0.0			7.7		
Approach LOS		B			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			9.4									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.30										
Actuated Cycle Length (s)			46.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			32.6%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													















HCM Signalized Intersection Capacity Analysis

23: Madison Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					  						  		
Volume (vph)	0	0	0	34	180	0	0	0	0	0	709	244	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.0						4.0		
Lane Util. Factor					0.91						0.91		
Frt					1.00						0.96		
Flt Protected					0.99						1.00		
Satd. Flow (prot)					4541						4401		
Flt Permitted					0.99						1.00		
Satd. Flow (perm)					4541						4401		
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	
Adj. Flow (vph)	0	0	0	34	180	0	0	0	0	0	709	244	
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	125	0	
Lane Group Flow (vph)	0	0	0	0	191	0	0	0	0	0	828	0	
Turn Type				Split	NA						NA		
Protected Phases				8	8						6		
Permitted Phases													
Actuated Green, G (s)					15.0						22.0		
Effective Green, g (s)					15.0						22.0		
Actuated g/C Ratio					0.33						0.49		
Clearance Time (s)					4.0						4.0		
Lane Grp Cap (vph)					1513						2151		
v/s Ratio Prot					c0.04						c0.19		
v/s Ratio Perm													
v/c Ratio					0.13						0.39		
Uniform Delay, d1					10.4						7.2		
Progression Factor					1.01						1.00		
Incremental Delay, d2					0.2						0.5		
Delay (s)					10.7						7.8		
Level of Service					B						A		
Approach Delay (s)		0.0			10.7			0.0			7.8		
Approach LOS		A			B			A			A		
Intersection Summary													
HCM 2000 Control Delay			8.3		HCM 2000 Level of Service						A		
HCM 2000 Volume to Capacity ratio			0.28										
Actuated Cycle Length (s)			45.0		Sum of lost time (s)						8.0		
Intersection Capacity Utilization			32.6%		ICU Level of Service						A		
Analysis Period (min)			15										
c Critical Lane Group													




















HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	435	254	0	0	0	0	0	0	142	678	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0									4.0		
Lane Util. Factor		0.86									0.91		
Frt		0.94									1.00		
Flt Protected		1.00									0.99		
Satd. Flow (prot)		5448									4537		
Flt Permitted		1.00									0.99		
Satd. Flow (perm)		5448									4537		
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	
Adj. Flow (vph)	0	435	254	0	0	0	0	0	0	142	678	0	
RTOR Reduction (vph)	0	107	0	0	0	0	0	0	0	0	54	0	
Lane Group Flow (vph)	0	582	0	0	0	0	0	0	0	0	766	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		23.0									29.0		
Effective Green, g (s)		23.0									29.0		
Actuated g/C Ratio		0.38									0.48		
Clearance Time (s)		4.0									4.0		
Vehicle Extension (s)		3.0									3.0		
Lane Grp Cap (vph)		2088									2192		
v/s Ratio Prot		c0.11											
v/s Ratio Perm											0.17		
v/c Ratio		0.28									0.35		
Uniform Delay, d1		12.8									9.6		
Progression Factor		0.51									1.00		
Incremental Delay, d2		0.2									0.4		
Delay (s)		6.7									10.1		
Level of Service		A									B		
Approach Delay (s)		6.7			0.0			0.0			10.1		
Approach LOS		A			A			A			B		
Intersection Summary													
HCM 2000 Control Delay			8.5									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.32										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			39.4%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Volume (veh/h)	92	0	70	2	0	0	356	578	0	0	325	97
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	92	0	70	2	0	0	356	578	0	0	325	97
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											563	
pX, platoon unblocked												
vC, conflicting volume	1374	1664	211	1522	1712	289	422			578		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1374	1664	211	1522	1712	289	422			578		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	91	96	100	100	69			100		
cM capacity (veh/h)	79	66	794	56	61	708	1134			992		
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	92	70	356	289	289	217	205					
Volume Left	92	0	356	0	0	0	0					
Volume Right	0	70	0	0	0	0	97					
cSH	79	794	1134	1700	1700	1700	1700					
Volume to Capacity	1.16	0.09	0.31	0.17	0.17	0.13	0.12					
Queue Length 95th (ft)	168	7	34	0	0	0	0					
Control Delay (s)	246.0	10.0	9.6	0.0	0.0	0.0	0.0					
Lane LOS	F	A	A									
Approach Delay (s)	144.0		3.7			0.0						
Approach LOS	F											
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			Err%		ICU Level of Service				H			
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #25
Oak Street / Embarcadero
Cumulative
AM Peak Hour

PART A or PART B satisfied YES NO

PART A **PART A** satisfied YES NO

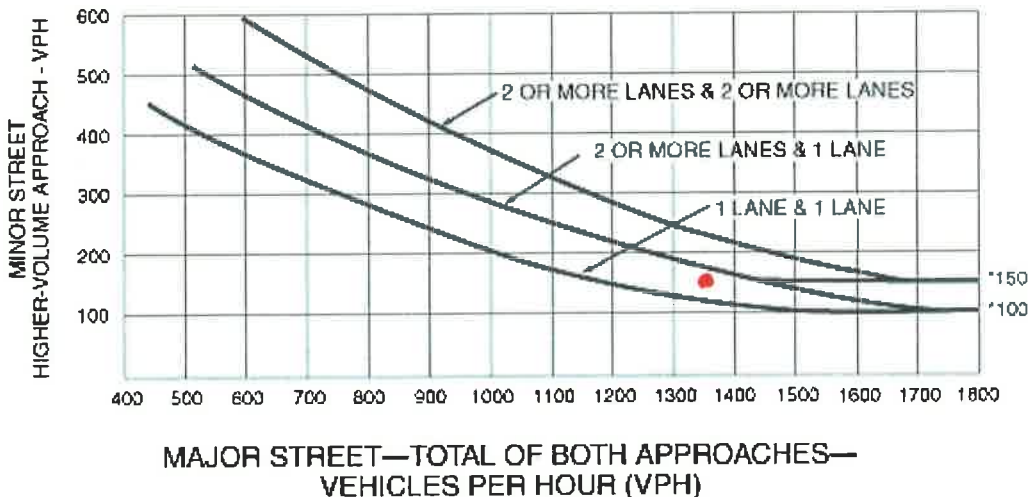
(All parts 1, 2, and 3 below must be satisfied)

1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and
 Yes No 6.48
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
 Yes No 162
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
 Yes No 1520

PART B **PART B** satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street























Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	45	94	153	709	514	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.91		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1666		1770	1863	1863	1583
Flt Permitted	0.98		0.45	1.00	1.00	1.00
Satd. Flow (perm)	1666		846	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	94	153	709	514	84
RTOR Reduction (vph)	83	0	0	0	0	22
Lane Group Flow (vph)	56	0	153	709	514	62
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	6.3		41.5	41.5	41.5	41.5
Effective Green, g (s)	6.3		41.5	41.5	41.5	41.5
Actuated g/C Ratio	0.11		0.74	0.74	0.74	0.74
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	188		629	1385	1385	1177
v/s Ratio Prot	c0.03			c0.38	0.28	
v/s Ratio Perm			0.18			0.04
v/c Ratio	0.30		0.24	0.51	0.37	0.05
Uniform Delay, d1	22.7		2.2	3.0	2.5	1.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.9	1.4	0.8	0.1
Delay (s)	23.6		3.2	4.3	3.3	2.0
Level of Service	C		A	A	A	A
Approach Delay (s)	23.6			4.1	3.1	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			
















HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  			 	
Volume (vph)	269	682	155	0	0	0	0	589	181	3	155	0
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	
Lane Util. Factor		0.91						0.95			1.00	
Frt		0.98						0.96			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		4919						3414			1861	
Flt Permitted		0.99						1.00			0.99	
Satd. Flow (perm)		4919						3414			1836	
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
Adj. Flow (vph)	269	682	155	0	0	0	0	589	181	3	155	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	65	0	0	0	0
Lane Group Flow (vph)	0	1056	0	0	0	0	0	705	0	0	158	0
Turn Type	Split	NA						NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases										6		
Actuated Green, G (s)		22.0						15.0			15.0	
Effective Green, g (s)		22.0						15.0			15.0	
Actuated g/C Ratio		0.49						0.33			0.33	
Clearance Time (s)		4.0						4.0			4.0	
Lane Grp Cap (vph)		2404						1138			612	
v/s Ratio Prot		c0.21						c0.21				
v/s Ratio Perm											0.09	
v/c Ratio		0.44						0.62			0.26	
Uniform Delay, d1		7.5						12.6			10.9	
Progression Factor		1.00						1.00			1.12	
Incremental Delay, d2		0.6						2.5			1.0	
Delay (s)		8.1						15.1			13.3	
Level of Service		A						B			B	
Approach Delay (s)		8.1			0.0			15.1			13.3	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			11.2					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			45.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			50.8%					ICU Level of Service		A		
Analysis Period (min)			15									
c	Critical Lane Group											















HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street


















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	75	61	527	150	463	0	0	0	0
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				
Lane Util. Factor					0.91	0.91		0.95				
Frt					0.90	0.85		1.00				
Flt Protected					0.99	1.00		0.99				
Satd. Flow (prot)					2724	1297		3147				
Flt Permitted					0.99	1.00		0.99				
Satd. Flow (perm)					2724	1297		3147				
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
Adj. Flow (vph)	0	0	0	75	61	527	150	463	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	90	90	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	310	173	0	613	0	0	0	0
Turn Type				Split	NA	Perm	Split	NA				
Protected Phases				8	8		2	2				
Permitted Phases						8						
Actuated Green, G (s)					22.0	22.0		15.0				
Effective Green, g (s)					22.0	22.0		15.0				
Actuated g/C Ratio					0.49	0.49		0.33				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1331	634		1049				
v/s Ratio Prot					0.11			c0.19				
v/s Ratio Perm						c0.13						
v/c Ratio					0.23	0.27		0.58				
Uniform Delay, d1					6.6	6.8		12.4				
Progression Factor					1.00	1.00		0.75				
Incremental Delay, d2					0.4	1.1		2.0				
Delay (s)					7.0	7.8		11.2				
Level of Service					A	A		B				
Approach Delay (s)		0.0			7.4			11.2			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			9.2		HCM 2000 Level of Service					A		
HCM 2000 Volume to Capacity ratio			0.40									
Actuated Cycle Length (s)			45.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			49.9%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	416	0	0	0	0	0	932	83	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5708						4521				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5708						4521				
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
Adj. Flow (vph)	108	416	0	0	0	0	0	932	83	0	0	0
RTOR Reduction (vph)	0	26	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	498	0	0	0	0	0	998	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		27.0						24.0				
Effective Green, g (s)		27.0						24.0				
Actuated g/C Ratio		0.45						0.40				
Clearance Time (s)		4.5						4.5				
Lane Grp Cap (vph)		2568						1808				
v/s Ratio Prot								c0.22				
v/s Ratio Perm		0.09										
v/c Ratio		0.19						0.55				
Uniform Delay, d1		9.9						13.9				
Progression Factor		1.26						1.00				
Incremental Delay, d2		0.2						1.2				
Delay (s)		12.7						15.1				
Level of Service		B						B				
Approach Delay (s)		12.7			0.0			15.1			0.0	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			14.3					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.36									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			69.1%					ICU Level of Service		C		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	70	421	19	20	623	436	75	45	56	390	16	137
Peak Hour 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
Hourly flow rate (vph)	70	421	19	20	623	436	75	45	56	390	16	137
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	510	643	436	176	543							
Volume Left (vph)	70	20	0	75	390							
Volume Right (vph)	19	0	436	56	137							
Hadj (s)	0.04	0.05	-0.67	-0.07	0.03							
Departure Headway (s)	8.3	8.6	7.9	9.5	8.2							
Degree Utilization, x	1.17	1.54	0.95	0.46	1.23							
Capacity (veh/h)	439	422	452	367	436							
Control Delay (s)	127.7	273.8	58.6	20.3	149.4							
Approach Delay (s)	127.7	186.9		20.3	149.4							
Approach LOS	F	F		C	F							
Intersection Summary												
Delay			152.3									
Level of Service			F									
Intersection Capacity Utilization			108.6%	ICU Level of Service	G							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

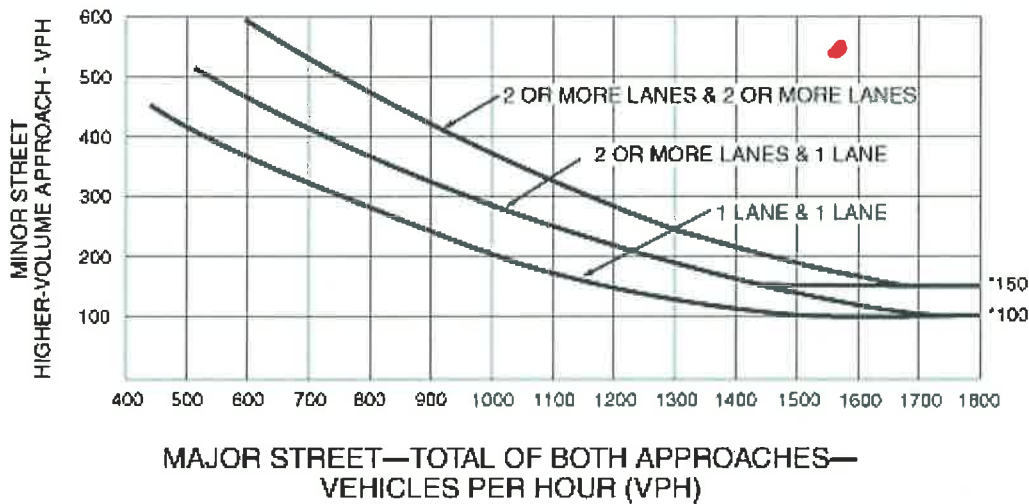
Intersection #30
5th Avenue / Embarcadero
Cumulative
AM Peak Hour

PART B

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.























Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.





























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	269	193	68	38	334	106	77	857	37	58	617	344	
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	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3411		1770	3517		1770	3539	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3411		1770	3517		1770	3539	1583	
Peak-hour factor, 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)	292	210	74	41	363	115	84	932	40	63	671	374	
RTOR Reduction (vph)	0	0	50	0	31	0	0	3	0	0	0	315	
Lane Group Flow (vph)	292	210	24	41	447	0	84	969	0	63	671	59	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over	
Protected Phases	7	4		3	8		5	2		1	6	7	
Permitted Phases			4										
Actuated Green, G (s)	12.3	25.6	25.6	4.6	17.9		7.3	25.4		6.8	24.9	12.3	
Effective Green, g (s)	12.3	25.6	25.6	4.6	17.9		7.3	25.4		6.8	24.9	12.3	
Actuated g/C Ratio	0.16	0.33	0.33	0.06	0.23		0.09	0.32		0.09	0.32	0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	538	1155	516	103	778		164	1139		153	1123	248	
v/s Ratio Prot	c0.09	0.06		0.02	c0.13		c0.05	c0.28		0.04	0.19	0.04	
v/s Ratio Perm			0.02										
v/c Ratio	0.54	0.18	0.05	0.40	0.57		0.51	0.85		0.41	0.60	0.24	
Uniform Delay, d1	30.5	18.9	18.1	35.6	26.9		33.9	24.7		33.9	22.5	28.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.1	0.0	2.5	1.0		2.7	8.1		1.8	2.3	0.5	
Delay (s)	31.6	19.0	18.1	38.1	27.9		36.5	32.8		35.7	24.9	29.4	
Level of Service	C	B	B	D	C		D	C		D	C	C	
Approach Delay (s)		25.3			28.7			33.1			27.0		
Approach LOS		C			C			C			C		
Intersection Summary													
HCM 2000 Control Delay			28.9									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.68										
Actuated Cycle Length (s)			78.4									Sum of lost time (s)	16.0
Intersection Capacity Utilization			61.8%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue


















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 		 	 		 	 		
Volume (vph)	152	283	124	65	338	162	119	876	47	125	507	57	
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	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00	
Frt	1.00	0.95		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583	
Peak-hour factor, 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)	165	308	135	71	367	176	129	952	51	136	551	62	
RTOR Reduction (vph)	0	46	0	0	59	0	0	0	35	0	0	43	
Lane Group Flow (vph)	165	397	0	71	484	0	129	952	16	136	551	19	
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases									2			6	
Actuated Green, G (s)	12.9	23.6		7.3	18.0		8.5	24.4	24.4	8.7	24.6	24.6	
Effective Green, g (s)	12.9	23.6		7.3	18.0		8.5	24.4	24.4	8.7	24.6	24.6	
Actuated g/C Ratio	0.16	0.30		0.09	0.22		0.11	0.30	0.30	0.11	0.31	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	285	996		161	757		364	1079	482	373	1088	486	
v/s Ratio Prot	c0.09	0.12		0.04	c0.14		0.04	c0.27		c0.04	0.16		
v/s Ratio Perm									0.01			0.01	
v/c Ratio	0.58	0.40		0.44	0.64		0.35	0.88	0.03	0.36	0.51	0.04	
Uniform Delay, d1	31.0	22.5		34.4	28.1		33.2	26.4	19.5	33.1	22.7	19.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	0.3		1.9	1.8		0.6	10.4	0.1	0.6	1.7	0.2	
Delay (s)	33.9	22.8		36.3	29.8		33.8	36.9	19.6	33.7	24.4	19.6	
Level of Service	C	C		D	C		C	D	B	C	C	B	
Approach Delay (s)		25.8			30.6			35.8			25.7		
Approach LOS		C			C			D			C		
Intersection Summary													
HCM 2000 Control Delay			30.4									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.68										
Actuated Cycle Length (s)			80.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			64.1%									ICU Level of Service	C
Analysis Period (min)			15										
c	Critical Lane Group												

Level Of Service Computation Report

Cumulative Year 2035 No Project Conditions
PM Peak Hour

























HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	273	14	8	161	39	42	97	22	45	20	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	53	273	14	8	161	39	42	97	22	45	20	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	200			287			532	602	144	510	590	100
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	200			287			532	602	144	510	590	100
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			89	75	97	87	95	96
cM capacity (veh/h)	1370			1272			383	394	878	341	400	936
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	190	150	88	120	161	45	13	47				
Volume Left	53	0	8	0	42	45	0	0				
Volume Right	0	14	0	39	22	0	0	40				
cSH	1370	1700	1272	1700	422	341	400	786				
Volume to Capacity	0.04	0.09	0.01	0.07	0.38	0.13	0.03	0.06				
Queue Length 95th (ft)	3	0	0	0	44	11	3	5				
Control Delay (s)	2.4	0.0	0.8	0.0	18.7	17.1	14.3	9.9				
Lane LOS	A		A		C	C	B	A				
Approach Delay (s)	1.3		0.3		18.7	13.6						
Approach LOS					C	B						
Intersection Summary												
Average Delay			6.1									
Intersection Capacity Utilization			40.9%		ICU Level of Service				A			
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  						  		  	  		
Volume (vph)	6	471	13	0	0	0	0	176	24	105	73	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						4.5		4.5	4.5		
Lane Util. Factor		0.91						0.95		1.00	0.91		
Frt		1.00						0.98		1.00	1.00		
Flt Protected		1.00						1.00		0.95	1.00		
Satd. Flow (prot)		5062						3476		1770	5085		
Flt Permitted		1.00						1.00		0.63	1.00		
Satd. Flow (perm)		5062						3476		1166	5085		
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	
Adj. Flow (vph)	6	471	13	0	0	0	0	176	24	105	73	0	
RTOR Reduction (vph)	0	3	0	0	0	0	0	12	0	0	0	0	
Lane Group Flow (vph)	0	487	0	0	0	0	0	188	0	105	73	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		60.5						19.5		19.5	19.5		
Effective Green, g (s)		60.5						19.5		19.5	19.5		
Actuated g/C Ratio		0.67						0.22		0.22	0.22		
Clearance Time (s)		5.5						4.5		4.5	4.5		
Vehicle Extension (s)		3.0						3.0		3.0	3.0		
Lane Grp Cap (vph)		3402						753		252	1101		
v/s Ratio Prot								0.05			0.01		
v/s Ratio Perm		0.10								c0.09			
v/c Ratio		0.14						0.25		0.42	0.07		
Uniform Delay, d1		5.3						29.2		30.4	28.0		
Progression Factor		1.00						1.00		0.85	0.84		
Incremental Delay, d2		0.1						0.8		5.0	0.1		
Delay (s)		5.4						30.0		30.8	23.6		
Level of Service		A						C		C	C		
Approach Delay (s)		5.4			0.0			30.0			27.9		
Approach LOS		A			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			15.7									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.21										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			33.0%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	0	0	0	23	156	272	17	33	156	0	0	146	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95	
Frt					1.00	0.85		1.00	1.00			1.00	
Flt Protected					0.99	1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3517	1583		1770	1863			3539	
Flt Permitted					0.99	1.00		0.66	1.00			1.00	
Satd. Flow (perm)					3517	1583		1228	1863			3539	
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	
Adj. Flow (vph)	0	0	0	23	156	272	17	33	156	0	0	146	
RTOR Reduction (vph)	0	0	0	0	0	239	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	179	33	0	50	156	0	0	146	
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA	
Protected Phases					8				2			6	
Permitted Phases				8		8	2	2					
Actuated Green, G (s)					10.9	10.9		70.1	70.1			70.1	
Effective Green, g (s)					10.9	10.9		70.1	70.1			70.1	
Actuated g/C Ratio					0.12	0.12		0.78	0.78			0.78	
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5	
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					425	191		956	1451			2756	
v/s Ratio Prot									c0.08			0.04	
v/s Ratio Perm					0.05	0.02		0.04					
v/c Ratio					0.42	0.17		0.05	0.11			0.05	
Uniform Delay, d1					36.6	35.5		2.3	2.4			2.3	
Progression Factor					1.03	1.92		0.18	0.36			1.00	
Incremental Delay, d2					0.7	0.4		0.1	0.1			0.0	
Delay (s)					38.4	68.4		0.5	1.0			2.3	
Level of Service					D	E		A	A			A	
Approach Delay (s)		0.0			56.5				0.9			2.3	
Approach LOS		A			E				A			A	
Intersection Summary													
HCM 2000 Control Delay			31.1		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.15										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)				9.0				
Intersection Capacity Utilization			33.0%		ICU Level of Service				A				
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis



























3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	35
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	35
RTOR Reduction (vph)	8
Lane Group Flow (vph)	27
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	70.1
Effective Green, g (s)	70.1
Actuated g/C Ratio	0.78
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1232
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	2.2
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	2.3
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Volume (vph)	132	991	80	35	424	46	137	254	45	66	107	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5028		1770	5011		1770	1821		1770	3539	1583
Flt Permitted	0.47	1.00		0.20	1.00		0.68	1.00		0.50	1.00	1.00
Satd. Flow (perm)	881	5028		379	5011		1275	1821		924	3539	1583
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
Adj. Flow (vph)	132	991	80	35	424	46	137	254	45	66	107	74
RTOR Reduction (vph)	0	11	0	0	16	0	0	7	0	0	0	42
Lane Group Flow (vph)	132	1060	0	35	454	0	137	292	0	66	107	32
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Effective Green, g (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	404	2306		173	2299		547	781		396	1519	679
v/s Ratio Prot		c0.21			0.09			c0.16			0.03	
v/s Ratio Perm	0.15			0.09			0.11			0.07		0.02
v/c Ratio	0.33	0.46		0.20	0.20		0.25	0.37		0.17	0.07	0.05
Uniform Delay, d1	14.6	15.8		13.7	13.7		15.5	16.5		14.9	14.3	14.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.7		2.6	0.2		1.1	1.4		0.2	0.0	0.0
Delay (s)	16.8	16.4		16.3	13.9		16.6	17.8		15.1	14.3	14.1
Level of Service	B	B		B	B		B	B		B	B	B
Approach Delay (s)		16.5			14.1			17.5			14.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)		9.5			
Intersection Capacity Utilization			59.9%				ICU Level of Service		B			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street



















Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations						
Volume (vph)	194	613	1360	44	76	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	1.00		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5416	4555		2984	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5416	4555		2984	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	194	613	1360	44	76	41
RTOR Reduction (vph)	111	65	4	0	0	0
Lane Group Flow (vph)	44	587	1400	0	117	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	24.0	24.0	29.2		16.8	
Effective Green, g (s)	24.0	24.0	29.2		16.8	
Actuated g/C Ratio	0.28	0.28	0.34		0.20	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	364	1529	1564		589	
v/s Ratio Prot	0.03	c0.11	c0.31		c0.04	
v/s Ratio Perm						
v/c Ratio	0.12	0.38	0.90		0.20	
Uniform Delay, d1	22.7	24.6	26.4		28.5	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.7	8.4		0.2	
Delay (s)	23.3	25.3	34.8		28.6	
Level of Service	C	C	C		C	
Approach Delay (s)		24.9	34.8		28.6	
Approach LOS		C	C		C	

Intersection Summary

HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			


















HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	249	802	36	1745	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5	4.5	5.0	5.0				
Lane Util. Factor					0.91	0.91	0.81	0.81				
Frt					0.91	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					2769	1297	1290	5431				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					2769	1297	1290	5431				
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
Adj. Flow (vph)	0	0	0	0	249	802	36	1745	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	15	17	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	649	386	15	1739	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					34.9	34.9	40.6	40.6				
Effective Green, g (s)					34.9	34.9	40.6	40.6				
Actuated g/C Ratio					0.41	0.41	0.48	0.48				
Clearance Time (s)					4.5	4.5	5.0	5.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					1136	532	616	2594				
v/s Ratio Prot					0.23							
v/s Ratio Perm						c0.30	0.01	0.32				
v/c Ratio					0.57	0.72	0.02	0.67				
Uniform Delay, d1					19.3	21.0	11.7	17.1				
Progression Factor					1.00	1.00	0.02	0.27				
Incremental Delay, d2					0.7	4.9	0.0	0.9				
Delay (s)					20.0	25.9	0.3	5.5				
Level of Service					B	C	A	A				
Approach Delay (s)		0.0			22.2			5.4			0.0	
Approach LOS		A			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.7									B
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			85.0								9.5	
Intersection Capacity Utilization			70.3%									C
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	24	82	14	12	35	64	6	34	17	310	217	84
Peak Hour 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
Hourly flow rate (vph)	24	82	14	12	35	64	6	34	17	310	217	84
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	120	111	57	419	193							
Volume Left (vph)	24	12	6	310	0							
Volume Right (vph)	14	64	17	0	84							
Hadj (s)	0.00	-0.29	-0.12	0.40	-0.27							
Departure Headway (s)	5.6	5.4	5.3	5.6	5.0							
Degree Utilization, x	0.19	0.17	0.08	0.66	0.27							
Capacity (veh/h)	591	615	633	625	709							
Control Delay (s)	9.9	9.4	8.8	17.5	8.5							
Approach Delay (s)	9.9	9.4	8.8	14.7								
Approach LOS	A	A	A	B								
Intersection Summary												
Delay			13.0									
Level of Service			B									
Intersection Capacity Utilization			41.4%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	20	10	13	20	49	59	484	161	135	515	84
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	26	20	10	13	20	49	59	484	161	135	515	84
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											288	
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94					
vC, conflicting volume	1246	1590	300	1230	1552	322	599			645		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1138	1503	133	1121	1462	322	451			645		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	74	78	99	88	79	93	94			86		
cM capacity (veh/h)	98	92	840	107	97	673	1042			936		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	56	82	301	403	392	342						
Volume Left	26	13	59	0	135	0						
Volume Right	10	49	0	161	0	84						
cSH	113	205	1042	1700	936	1700						
Volume to Capacity	0.49	0.40	0.06	0.24	0.14	0.20						
Queue Length 95th (ft)	56	45	4	0	13	0						
Control Delay (s)	64.4	33.9	2.2	0.0	4.3	0.0						
Lane LOS	F	D	A		A							
Approach Delay (s)	64.4	33.9	0.9		2.3							
Approach LOS	F	D										
Intersection Summary												
Average Delay			5.5									
Intersection Capacity Utilization			58.3%	ICU Level of Service	B							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #8
Broadway / 2nd Street
Cumulative
PM Peak Hour

PART A or PART B satisfied YES NO

PART A **PART A** satisfied YES NO

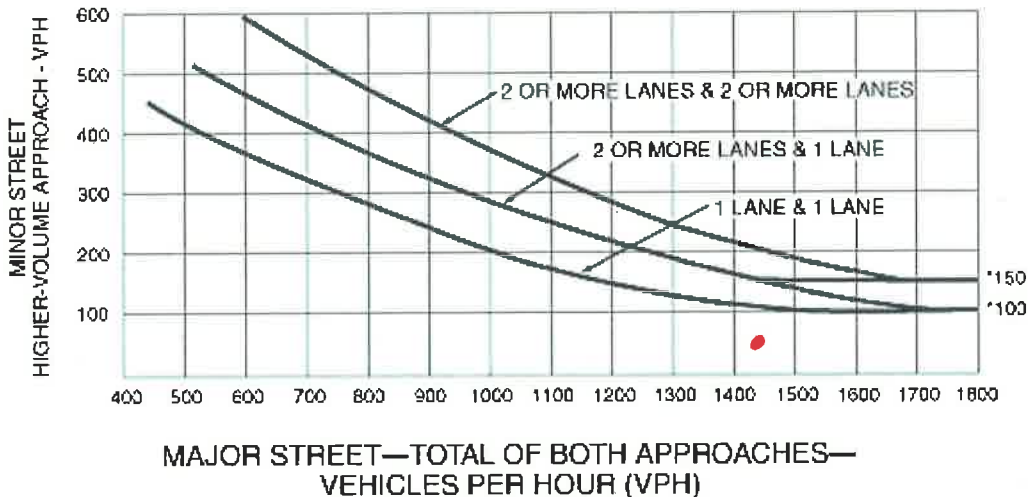
(All parts 1, 2, and 3 below must be satisfied)

- | | | |
|---|---|-------------|
| 1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <u>1.0</u> |
| 2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <u>50</u> |
| 3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches. | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <u>1570</u> |

PART B **PART B** satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.



















Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	118	28	10	102	99	23	274	18	102	459	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.97			0.94			0.99			0.97	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1809			1741			3496			3396	
Flt Permitted	0.62	1.00			0.99			0.89			0.84	
Satd. Flow (perm)	1158	1809			1724			3124			2889	
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
Adj. Flow (vph)	106	118	28	10	102	99	23	274	18	102	459	162
RTOR Reduction (vph)	0	11	0	0	42	0	0	6	0	0	36	0
Lane Group Flow (vph)	106	135	0	0	169	0	0	309	0	0	687	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	494	771			735			1416			1309	
v/s Ratio Prot		0.07										
v/s Ratio Perm	0.09				c0.10			0.10			c0.24	
v/c Ratio	0.21	0.17			0.23			0.22			0.53	
Uniform Delay, d1	13.6	13.3			13.7			12.4			14.7	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.0	0.5			0.7			0.4			1.5	
Delay (s)	14.6	13.8			14.4			12.8			16.2	
Level of Service	B	B			B			B			B	
Approach Delay (s)		14.1			14.4			12.8			16.2	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			14.9					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			64.5%					ICU Level of Service			C	
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 			
Volume (vph)	1162	328	84	0	0	0	0	408	446	879	378	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00		
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1610	3285	1583					3539	1583	3433	1863		
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1610	3285	1583					3539	1583	3433	1863		
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	
Adj. Flow (vph)	1162	328	84	0	0	0	0	408	446	879	378	0	
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	135	0	0	0	
Lane Group Flow (vph)	581	909	28	0	0	0	0	408	311	879	378	0	
Turn Type	Split	NA	Prot					NA	Prot	Prot	NA		
Protected Phases	4	4	4					2	2	1	6		
Permitted Phases													
Actuated Green, G (s)	30.5	30.5	30.5					24.5	24.5	21.5	49.5		
Effective Green, g (s)	30.5	30.5	30.5					24.5	24.5	21.5	49.5		
Actuated g/C Ratio	0.34	0.34	0.34					0.27	0.27	0.24	0.55		
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	545	1113	536					963	430	820	1024		
v/s Ratio Prot	c0.36	0.28	0.02					0.12	c0.20	c0.26	0.20		
v/s Ratio Perm													
v/c Ratio	1.07	1.02dl	0.05					0.42	0.72	1.07	0.37		
Uniform Delay, d1	29.8	27.2	20.0					26.9	29.7	34.2	11.4		
Progression Factor	0.91	0.91	0.79					1.00	1.00	1.35	1.98		
Incremental Delay, d2	57.3	4.7	0.0					1.4	10.2	50.3	0.2		
Delay (s)	84.5	29.5	15.9					28.3	39.8	96.5	22.9		
Level of Service	F	C	B					C	D	F	C		
Approach Delay (s)		49.1			0.0			34.3			74.3		
Approach LOS		D			A			C			E		
Intersection Summary													
HCM 2000 Control Delay			54.3									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.96										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			134.0%									ICU Level of Service	H
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													


















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	263	164	791	91	352	0	0	867	40
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	
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1593	3185	1425	1593	3185			4546	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1593	3185	1425	1593	3185			4546	
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
Adj. Flow (vph)	0	0	0	263	164	791	91	352	0	0	867	40
RTOR Reduction (vph)	0	0	0	0	0	250	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	263	164	541	91	352	0	0	902	0
Turn Type				Split	NA	Prot	Prot	NA			NA	
Protected Phases				8	8	8	5	2			6	
Permitted Phases												
Actuated Green, G (s)				36.6	36.6	36.6	15.2	45.4			26.2	
Effective Green, g (s)				36.6	36.6	36.6	15.2	45.4			26.2	
Actuated g/C Ratio				0.41	0.41	0.41	0.17	0.50			0.29	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				647	1295	579	269	1606			1323	
v/s Ratio Prot				0.17	0.05	c0.38	c0.06	0.11			c0.20	
v/s Ratio Perm												
v/c Ratio				0.41	0.13	0.93	0.34	0.22			0.68	
Uniform Delay, d1				19.0	16.7	25.5	33.0	12.4			28.2	
Progression Factor				1.00	1.00	1.00	0.82	1.01			1.00	
Incremental Delay, d2				0.4	0.0	22.3	0.4	0.2			2.9	
Delay (s)				19.4	16.7	47.8	27.6	12.7			31.1	
Level of Service				B	B	D	C	B			C	
Approach Delay (s)		0.0			37.5			15.7			31.1	
Approach LOS		A			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			31.5	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			90.0	Sum of lost time (s)				12.0				
Intersection Capacity Utilization			134.0%	ICU Level of Service				H				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	813	305	0	0	0	0	453	68	127	895	0
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	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.98		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4532	1425					3123		1593	3185	
Flt Permitted		0.99	1.00					1.00		0.40	1.00	
Satd. Flow (perm)		4532	1425					3123		677	3185	
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
Adj. Flow (vph)	199	813	305	0	0	0	0	453	68	127	895	0
RTOR Reduction (vph)	0	0	57	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	1012	248	0	0	0	0	502	0	127	895	0
Turn Type	Split	NA	Perm					NA		pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			4							6		
Actuated Green, G (s)		23.0	23.0					21.0		29.0	29.0	
Effective Green, g (s)		23.0	23.0					21.0		29.0	29.0	
Actuated g/C Ratio		0.38	0.38					0.35		0.48	0.48	
Clearance Time (s)		4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		1737	546					1093		388	1539	
v/s Ratio Prot		c0.22						0.16		0.02	c0.28	
v/s Ratio Perm			0.17							0.14		
v/c Ratio		0.58	0.45					0.46		0.33	0.58	
Uniform Delay, d1		14.7	13.8					15.1		11.5	11.1	
Progression Factor		1.00	1.00					1.00		0.70	0.76	
Incremental Delay, d2		0.5	0.6					1.4		0.4	1.2	
Delay (s)		15.2	14.4					16.5		8.4	9.7	
Level of Service		B	B					B		A	A	
Approach Delay (s)		15.0			0.0			16.5			9.6	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.3					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		12.0		
Intersection Capacity Utilization			69.5%					ICU Level of Service			C	
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑		↑	↑↑			↑↑↑	
Volume (vph)	0	0	0	206	692	127	124	458	0	0	783	109
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	
Lane Util. Factor					0.95		1.00	0.95			0.91	
Flt					0.98		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3095		1593	3185			4493	
Flt Permitted					0.99		0.23	1.00			1.00	
Satd. Flow (perm)					3095		390	3185			4493	
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
Adj. Flow (vph)	0	0	0	206	692	127	124	458	0	0	783	109
RTOR Reduction (vph)	0	0	0	0	19	0	0	0	0	0	30	0
Lane Group Flow (vph)	0	0	0	0	1006	0	124	458	0	0	862	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					26.0		26.0	26.0			18.0	
Effective Green, g (s)					26.0		26.0	26.0			18.0	
Actuated g/C Ratio					0.43		0.43	0.43			0.30	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)					1341		249	1380			1347	
v/s Ratio Prot					c0.33		c0.03	0.14			c0.19	
v/s Ratio Perm							0.18					
v/c Ratio					0.75		0.50	0.33			0.64	
Uniform Delay, d1					14.3		17.0	11.3			18.2	
Progression Factor					1.00		0.46	0.49			1.54	
Incremental Delay, d2					3.9		6.2	0.6			1.4	
Delay (s)					18.2		14.0	6.1			29.4	
Level of Service					B		B	A			C	
Approach Delay (s)		0.0			18.2			7.8			29.4	
Approach LOS		A			B			A			C	





















Intersection Summary

HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 			 			 		
Volume (vph)	6	328	103	5	582	175	2	556	27	0	988	127	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5			5.5			5.5			5.5		
Lane Util. Factor		0.95			0.95			0.95			0.95		
Frt		0.96			0.97			0.99			0.98		
Flt Protected		1.00			1.00			1.00			1.00		
Satd. Flow (prot)		3071			3075			3163			3131		
Flt Permitted		0.94			0.95			0.95			1.00		
Satd. Flow (perm)		2901			2928			3010			3131		
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	
Adj. Flow (vph)	6	328	103	5	582	175	2	556	27	0	988	127	
RTOR Reduction (vph)	0	29	0	0	46	0	0	6	0	0	17	0	
Lane Group Flow (vph)	0	408	0	0	716	0	0	579	0	0	1098	0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA		
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2						
Actuated Green, G (s)		23.5			23.5			25.5			25.5		
Effective Green, g (s)		23.5			23.5			25.5			25.5		
Actuated g/C Ratio		0.39			0.39			0.42			0.42		
Clearance Time (s)		5.5			5.5			5.5			5.5		
Lane Grp Cap (vph)		1136			1146			1279			1330		
v/s Ratio Prot											c0.35		
v/s Ratio Perm		0.14			c0.24			0.19					
v/c Ratio		0.36			0.62			0.45			0.83		
Uniform Delay, d1		12.9			14.7			12.3			15.3		
Progression Factor		1.00			1.00			1.40			1.00		
Incremental Delay, d2		0.9			2.6			1.1			6.0		
Delay (s)		13.8			17.3			18.2			21.2		
Level of Service		B			B			B			C		
Approach Delay (s)		13.8			17.3			18.2			21.2		
Approach LOS		B			B			B			C		
Intersection Summary													
HCM 2000 Control Delay			18.5									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			72.1%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	87	39	18	83	0	0	0	0	9	21	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	87	39	18	83	0	0	0	0	9	21	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	83			126			254	226	106	226	245	83
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			126			254	226	106	226	245	83
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	97	98
cM capacity (veh/h)	1514			1460			663	665	948	723	649	976
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	126	101	20	28								
Volume Left	0	18	9	0								
Volume Right	39	0	0	18								
cSH	1700	1460	681	823								
Volume to Capacity	0.07	0.01	0.03	0.03								
Queue Length 95th (ft)	0	1	2	3								
Control Delay (s)	0.0	1.4	10.4	9.5								
Lane LOS		A	B	A								
Approach Delay (s)	0.0	1.4	9.9									
Approach LOS			A									
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			25.7%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											 	
Volume (veh/h)	0	189	12	19	188	0	0	0	0	12	18	74
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	189	12	19	188	0	0	0	0	12	18	74
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked												
vC, conflicting volume	188			201			504	421	195	421	427	188
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	188			201			504	421	195	421	427	188
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	98	96	91
cM capacity (veh/h)	1386			1371			421	517	846	537	513	854
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	201	207	21	83								
Volume Left	0	19	12	0								
Volume Right	12	0	0	74								
cSH	1700	1371	526	796								
Volume to Capacity	0.12	0.01	0.04	0.10								
Queue Length 95th (ft)	0	1	3	9								
Control Delay (s)	0.0	0.8	12.1	10.0								
Lane LOS		A	B	B								
Approach Delay (s)	0.0	0.8	10.5									
Approach LOS			B									
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			35.0%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
















17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	23	83	97	54	14	14
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	23	83	97	54	14	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		67	46	129	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		67	46	129	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	99		89	94	98	99
cM capacity (veh/h)	1623		891	834	751	1085
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total	23	83	151	14	14	
Volume Left	23	0	97	0	0	
Volume Right	0	83	0	0	14	
cSH	1623	1700	870	751	1085	
Volume to Capacity	0.01	0.05	0.17	0.02	0.01	
Queue Length 95th (ft)	1	0	16	1	1	
Control Delay (s)	7.2	0.0	10.0	9.9	8.4	
Lane LOS	A		B	A	A	
Approach Delay (s)	1.6		10.0	9.1		
Approach LOS			B	A		
Intersection Summary						
Average Delay			6.8			
Intersection Capacity Utilization			24.9%	ICU Level of Service	A	
Analysis Period (min)			15			




















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	334	1529	0	0	0	0	0	678	1172	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0	5.0			
Lane Util. Factor		0.91						0.91	0.88			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4536						4577	2508			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4536						4577	2508			
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
Adj. Flow (vph)	334	1529	0	0	0	0	0	678	1172	0	0	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	22	0	0	0
Lane Group Flow (vph)	0	1847	0	0	0	0	0	678	1150	0	0	0
Turn Type	Perm	NA						NA	custom			
Protected Phases		2						1				
Permitted Phases	2								5			
Actuated Green, G (s)		34.0						16.0	34.0			
Effective Green, g (s)		34.0						16.0	34.0			
Actuated g/C Ratio		0.57						0.27	0.57			
Clearance Time (s)		5.0						5.0	5.0			
Vehicle Extension (s)		3.0						3.0	3.0			
Lane Grp Cap (vph)		2570						1220	1421			
v/s Ratio Prot								0.15				
v/s Ratio Perm		0.41							c0.46			
v/c Ratio		0.72						0.56	0.81			
Uniform Delay, d1		9.5						18.9	10.4			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		1.8						0.6	3.5			
Delay (s)		11.3						19.5	13.9			
Level of Service		B						B	B			
Approach Delay (s)		11.3			0.0			16.0			0.0	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.6					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			94.2%					ICU Level of Service		F		
Analysis Period (min)			15									
c	Critical Lane Group											




















HCM Signalized Intersection Capacity Analysis

19: Jackson Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  								 			
Volume (vph)	298	622	369	0	0	0	0	581	39	106	82	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.5		5.5	5.5		
Lane Util. Factor		0.91						1.00		1.00	1.00		
Frt		0.96						0.99		1.00	1.00		
Flt Protected		0.99						1.00		0.95	1.00		
Satd. Flow (prot)		4811						1847		1770	1863		
Flt Permitted		0.99						1.00		0.16	1.00		
Satd. Flow (perm)		4811						1847		301	1863		
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	
Adj. Flow (vph)	298	622	369	0	0	0	0	581	39	106	82	0	
RTOR Reduction (vph)	0	96	0	0	0	0	0	3	0	0	0	0	
Lane Group Flow (vph)	0	1193	0	0	0	0	0	617	0	106	82	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		34.5						29.5		29.5	29.5		
Effective Green, g (s)		34.5						29.5		29.5	29.5		
Actuated g/C Ratio		0.46						0.39		0.39	0.39		
Clearance Time (s)		5.5						5.5		5.5	5.5		
Lane Grp Cap (vph)		2213						726		118	732		
v/s Ratio Prot								0.33			0.04		
v/s Ratio Perm		0.25								c0.35			
v/c Ratio		0.54						0.85		0.90	0.11		
Uniform Delay, d1		14.5						20.7		21.3	14.4		
Progression Factor		1.00						1.00		0.76	0.77		
Incremental Delay, d2		0.9						11.9		58.6	0.3		
Delay (s)		15.5						32.7		74.7	11.5		
Level of Service		B						C		E	B		
Approach Delay (s)		15.5			0.0			32.7			47.2		
Approach LOS		B			A			C			D		
Intersection Summary													
HCM 2000 Control Delay			23.4									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.70										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			99.8%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	11	389	53	364	434	0	0	213	514	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				2.5	2.5	2.5	2.5	2.5			2.5	4.0	
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425	
Flt Permitted				0.95	1.00	1.00	0.61	1.00			1.00	1.00	
Satd. Flow (perm)				1593	1676	1425	1021	1676			1676	1425	
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	
Adj. Flow (vph)	0	0	0	11	389	53	364	434	0	0	213	514	
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	11	389	16	364	434	0	0	213	514	
Turn Type				Split	NA	Perm	Perm	NA			NA	Free	
Protected Phases				8	8			2			6		
Permitted Phases						8	2					Free	
Actuated Green, G (s)				22.5	22.5	22.5	47.5	47.5			47.5	75.0	
Effective Green, g (s)				22.5	22.5	22.5	47.5	47.5			47.5	75.0	
Actuated g/C Ratio				0.30	0.30	0.30	0.63	0.63			0.63	1.00	
Clearance Time (s)				2.5	2.5	2.5	2.5	2.5			2.5		
Lane Grp Cap (vph)				477	502	427	646	1061			1061	1425	
v/s Ratio Prot				0.01	c0.23			0.26			0.13		
v/s Ratio Perm						0.01	c0.36					0.36	
v/c Ratio				0.02	0.77	0.04	0.56	0.41			0.20	0.36	
Uniform Delay, d1				18.5	23.9	18.6	7.8	6.8			5.8	0.0	
Progression Factor				1.00	1.00	1.00	0.55	0.59			1.00	1.00	
Incremental Delay, d2				0.1	11.1	0.2	2.3	0.7			0.4	0.7	
Delay (s)				18.6	35.1	18.7	6.6	4.8			6.2	0.7	
Level of Service				B	D	B	A	A			A	A	
Approach Delay (s)		0.0			32.8			5.6			2.3		
Approach LOS		A			C			A			A		
Intersection Summary													
HCM 2000 Control Delay			10.6		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.63										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)						5.0		
Intersection Capacity Utilization			99.8%		ICU Level of Service						F		
Analysis Period (min)			15										
c Critical Lane Group													





















HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	1079	482	0	0	0	0	313	144	36	338	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.98	0.85					0.96			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		4253	1226					1605			1668	
Flt Permitted		1.00	1.00					1.00			0.93	
Satd. Flow (perm)		4253	1226					1605			1567	
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
Adj. Flow (vph)	41	1079	482	0	0	0	0	313	144	36	338	0
RTOR Reduction (vph)	0	21	0	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	1224	357	0	0	0	0	431	0	0	374	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		27.0	60.0					24.0			24.0	
Effective Green, g (s)		27.0	60.0					24.0			24.0	
Actuated g/C Ratio		0.45	1.00					0.40			0.40	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1913	1226					642			626	
v/s Ratio Prot		c0.29						c0.27				
v/s Ratio Perm			0.29								0.24	
v/c Ratio		0.64	0.29					0.67			0.60	
Uniform Delay, d1		12.7	0.0					14.8			14.2	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		1.7	0.6					5.5			4.2	
Delay (s)		14.4	0.6					20.3			18.4	
Level of Service		B	A					C			B	
Approach Delay (s)		11.3			0.0			20.3			18.4	
Approach LOS		B			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			14.1					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			88.7%					ICU Level of Service		E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  								 	  		
Volume (vph)	0	725	35	0	0	0	0	0	0	931	89	0	
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		
Lane Util. Factor		0.91								0.91	0.91		
Frt		0.99								1.00	1.00		
Flt Protected		1.00								0.95	0.96		
Satd. Flow (prot)		5050								1610	3254		
Flt Permitted		1.00								0.95	0.96		
Satd. Flow (perm)		5050								1610	3254		
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	
Adj. Flow (vph)	0	725	35	0	0	0	0	0	0	931	89	0	
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	35	35	0	
Lane Group Flow (vph)	0	749	0	0	0	0	0	0	0	430	520	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		16.0								22.0	22.0		
Effective Green, g (s)		16.0								22.0	22.0		
Actuated g/C Ratio		0.35								0.48	0.48		
Clearance Time (s)		4.0								4.0	4.0		
Lane Grp Cap (vph)		1756								770	1556		
v/s Ratio Prot		c0.15											
v/s Ratio Perm										c0.27	0.16		
v/c Ratio		0.43								0.56	0.33		
Uniform Delay, d1		11.5								8.5	7.5		
Progression Factor		1.00								1.00	1.00		
Incremental Delay, d2		0.8								2.9	0.6		
Delay (s)		12.2								11.5	8.0		
Level of Service		B								B	A		
Approach Delay (s)		12.2			0.0			0.0			9.6		
Approach LOS		B			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			10.7									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.50										
Actuated Cycle Length (s)			46.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			41.1%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis















23: Madison Street & 6th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	
Volume (vph)	0	0	0	18	210	0	0	0	0	0	1047	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frt					1.00						0.97	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					4559						4454	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					4559						4454	
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
Adj. Flow (vph)	0	0	0	18	210	0	0	0	0	0	1047	227
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	76	0
Lane Group Flow (vph)	0	0	0	0	212	0	0	0	0	0	1198	0
Turn Type				Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases												
Actuated Green, G (s)					15.0						22.0	
Effective Green, g (s)					15.0						22.0	
Actuated g/C Ratio					0.33						0.49	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1519						2177	
v/s Ratio Prot					c0.05						c0.27	
v/s Ratio Perm												
v/c Ratio					0.14						0.55	
Uniform Delay, d1					10.5						8.0	
Progression Factor					0.89						1.00	
Incremental Delay, d2					0.2						1.0	
Delay (s)					9.5						9.0	
Level of Service					A						A	
Approach Delay (s)		0.0			9.5			0.0			9.0	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.1		HCM 2000 Level of Service					A		
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			45.0		Sum of lost time (s)				8.0			
Intersection Capacity Utilization			41.1%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	1045	342	0	0	0	0	0	0	309	852	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0									4.0		
Lane Util. Factor		0.86									0.91		
Frt		0.96									1.00		
Flt Protected		1.00									0.99		
Satd. Flow (prot)		5554									4517		
Flt Permitted		1.00									0.99		
Satd. Flow (perm)		5554									4517		
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	
Adj. Flow (vph)	0	1045	342	0	0	0	0	0	0	309	852	0	
RTOR Reduction (vph)	0	58	0	0	0	0	0	0	0	0	17	0	
Lane Group Flow (vph)	0	1329	0	0	0	0	0	0	0	0	1144	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		24.0									28.0		
Effective Green, g (s)		24.0									28.0		
Actuated g/C Ratio		0.40									0.47		
Clearance Time (s)		4.0									4.0		
Vehicle Extension (s)		3.0									3.0		
Lane Grp Cap (vph)		2221									2107		
v/s Ratio Prot		c0.24											
v/s Ratio Perm											0.25		
v/c Ratio		0.60									0.54		
Uniform Delay, d1		14.2									11.4		
Progression Factor		0.38									1.00		
Incremental Delay, d2		1.0									1.0		
Delay (s)		6.4									12.4		
Level of Service		A									B		
Approach Delay (s)		6.4			0.0			0.0			12.4		
Approach LOS		A			A			A			B		
Intersection Summary													
HCM 2000 Control Delay			9.1									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.57										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			55.1%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

25: Oak Street & 1st Street / Embarcadero

															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations								 			 				
Volume (veh/h)	42	0	59	5	0	1	218	677	0	0	734	133			
Sign Control		Stop			Stop			Free			Free				
Grade		0%			0%			0%			0%				
Peak Hour 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			
Hourly flow rate (vph)	42	0	59	5	0	1	218	677	0	0	734	133			
Pedestrians															
Lane Width (ft)															
Walking Speed (ft/s)															
Percent Blockage															
Right turn flare (veh)															
Median type						None			None						
Median storage (veh)															
Upstream signal (ft)												563			
pX, platoon unblocked															
vC, conflicting volume	1576	1914	434	1539	1980	338	867				677				
vC1, stage 1 conf vol															
vC2, stage 2 conf vol															
vCu, unblocked vol	1576	1914	434	1539	1980	338	867				677				
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1				
tC, 2 stage (s)															
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2				
p0 queue free %	27	100	90	91	100	100	72				100				
cM capacity (veh/h)	58	48	570	55	44	657	772				911				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2								
Volume Total	42	59	218	338	338	489	378								
Volume Left	42	0	218	0	0	0	0								
Volume Right	0	59	0	0	0	0	133								
cSH	58	570	772	1700	1700	1700	1700								
Volume to Capacity	0.73	0.10	0.28	0.20	0.20	0.29	0.22								
Queue Length 95th (ft)	78	9	29	0	0	0	0								
Control Delay (s)	161.7	12.0	11.5	0.0	0.0	0.0	0.0								
Lane LOS	F	B	B												
Approach Delay (s)	74.3	2.8		0.0											
Approach LOS	F														
Intersection Summary															
Average Delay			Err												
Intersection Capacity Utilization			Err%					ICU Level of Service			H				
Analysis Period (min)			15												

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #25
Oak Street / Embarcadero
Cumulative
PM Peak Hour

PART A or PART B satisfied YES NO

PART A **PART A** satisfied YES NO

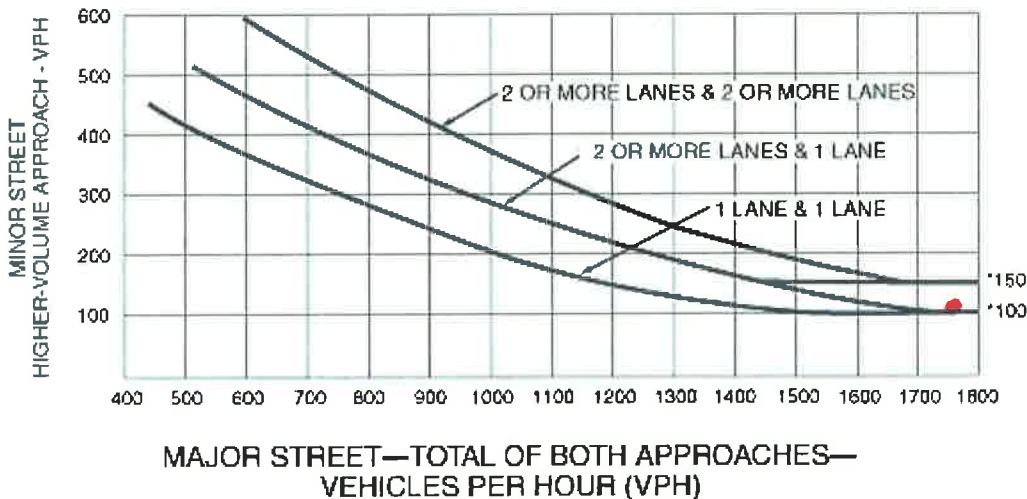
(All parts 1, 2, and 3 below must be satisfied)

- | | | |
|---|---|-------------|
| 1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <u>2.08</u> |
| 2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <u>101</u> |
| 3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches. | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <u>1869</u> |

PART B **PART B** satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



1762/101

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street






















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	79	77	136	732	847	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.93		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1696		1770	1863	1863	1583
Flt Permitted	0.98		0.27	1.00	1.00	1.00
Satd. Flow (perm)	1696		497	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	79	77	136	732	847	189
RTOR Reduction (vph)	67	0	0	0	0	51
Lane Group Flow (vph)	89	0	136	732	847	138
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	7.1		40.4	40.4	40.4	40.4
Effective Green, g (s)	7.1		40.4	40.4	40.4	40.4
Actuated g/C Ratio	0.13		0.73	0.73	0.73	0.73
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	216		361	1356	1356	1152
v/s Ratio Prot	c0.05			0.39	c0.45	
v/s Ratio Perm			0.27			0.09
v/c Ratio	0.41		0.38	0.54	0.62	0.12
Uniform Delay, d1	22.3		2.8	3.4	3.8	2.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3		3.0	1.5	2.2	0.2
Delay (s)	23.6		5.8	4.9	5.9	2.5
Level of Service	C		A	A	A	A
Approach Delay (s)	23.6			5.1	5.3	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Volume (vph)	246	1016	140	0	0	0	0	825	153	6	131	0
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	
Lane Util. Factor		0.91						0.95			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		4966						3456			1859	
Flt Permitted		0.99						1.00			0.95	
Satd. Flow (perm)		4966						3456			1776	
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
Adj. Flow (vph)	246	1016	140	0	0	0	0	825	153	6	131	0
RTOR Reduction (vph)	0	30	0	0	0	0	0	34	0	0	0	0
Lane Group Flow (vph)	0	1372	0	0	0	0	0	944	0	0	137	0
Turn Type	Split	NA						NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases										6		
Actuated Green, G (s)		22.0						15.0			15.0	
Effective Green, g (s)		22.0						15.0			15.0	
Actuated g/C Ratio		0.49						0.33			0.33	
Clearance Time (s)		4.0						4.0			4.0	
Lane Grp Cap (vph)		2427						1152			592	
v/s Ratio Prot		c0.28						c0.27				
v/s Ratio Perm											0.08	
v/c Ratio		0.57						0.82			0.23	
Uniform Delay, d1		8.1						13.8			10.8	
Progression Factor		1.00						1.00			1.16	
Incremental Delay, d2		1.0						6.6			0.9	
Delay (s)		9.1						20.3			13.4	
Level of Service		A						C			B	
Approach Delay (s)		9.1			0.0			20.3			13.4	
Approach LOS		A			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			13.7					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			45.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			62.1%					ICU Level of Service		B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕	↗		↕↕				
Volume (vph)	0	0	0	68	85	506	163	586	0	0	0	0
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				
Lane Util. Factor					0.91	0.91		0.95				
Frt					0.91	0.85		1.00				
Flt Protected					0.99	1.00		0.99				
Satd. Flow (prot)					2743	1297		3151				
Flt Permitted					0.99	1.00		0.99				
Satd. Flow (perm)					2743	1297		3151				
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
Adj. Flow (vph)	0	0	0	68	85	506	163	586	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	54	54	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	352	199	0	749	0	0	0	0
Turn Type				Split	NA	Perm	Split	NA				
Protected Phases				8	8		2	2				
Permitted Phases						8						
Actuated Green, G (s)					22.0	22.0		15.0				
Effective Green, g (s)					22.0	22.0		15.0				
Actuated g/C Ratio					0.49	0.49		0.33				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1341	634		1050				
v/s Ratio Prot					0.13			c0.24				
v/s Ratio Perm						c0.15						
v/c Ratio					0.26	0.31		0.71				
Uniform Delay, d1					6.7	6.9		13.1				
Progression Factor					1.00	1.00		0.79				
Incremental Delay, d2					0.5	1.3		2.6				
Delay (s)					7.2	8.2		13.0				
Level of Service					A	A		B				
Approach Delay (s)		0.0			7.6			13.0			0.0	
Approach LOS		A			A			B			A	















Intersection Summary

HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		


















c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	1035	0	0	0	0	0	1017	161	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.98				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5729						4483				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5729						4483				
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
Adj. Flow (vph)	161	1035	0	0	0	0	0	1017	161	0	0	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	30	0	0	0	0
Lane Group Flow (vph)	0	1177	0	0	0	0	0	1148	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		27.0						24.0				
Effective Green, g (s)		27.0						24.0				
Actuated g/C Ratio		0.45						0.40				
Clearance Time (s)		4.5						4.5				
Lane Grp Cap (vph)		2578						1793				
v/s Ratio Prot								c0.26				
v/s Ratio Perm		0.21										
v/c Ratio		0.46						0.64				
Uniform Delay, d1		11.4						14.5				
Progression Factor		0.80						1.00				
Incremental Delay, d2		0.5						1.8				
Delay (s)		9.7						16.3				
Level of Service		A						B				
Approach Delay (s)		9.7			0.0			16.3			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.9					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)			9.0	
Intersection Capacity Utilization			72.9%					ICU Level of Service			C	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	74	859	57	56	687	623	39	19	27	750	40	97
Peak Hour 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
Hourly flow rate (vph)	74	859	57	56	687	623	39	19	27	750	40	97
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	990	743	623	85	887							
Volume Left (vph)	74	56	0	39	750							
Volume Right (vph)	57	0	623	27	97							
Hadj (s)	0.01	0.07	-0.67	-0.06	0.14							
Departure Headway (s)	7.7	8.1	7.4	9.5	7.7							
Degree Utilization, x	2.11	1.68	1.28	0.22	1.90							
Capacity (veh/h)	477	448	496	374	476							
Control Delay (s)	525.0	333.2	162.2	15.2	430.2							
Approach Delay (s)	525.0	255.2		15.2	430.2							
Approach LOS	F	F		C	F							
Intersection Summary												
Delay			376.0									
Level of Service			F									
Intersection Capacity Utilization			158.2%	ICU Level of Service	H							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

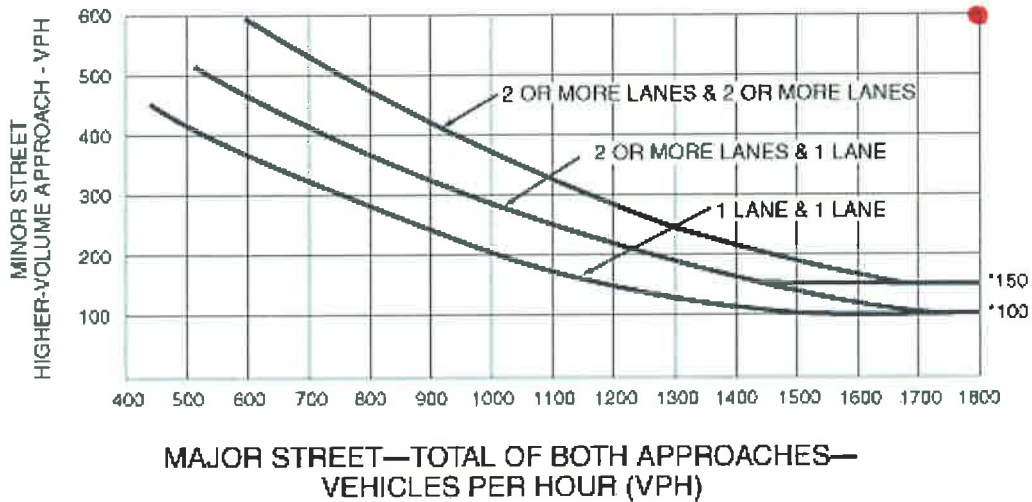
Intersection #30
5th Avenue / Embarcadero
Cumulative
PM Peak Hour

PART B

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour






























2358/887

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.





























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	
Volume (vph)	242	216	59	166	581	113	33	526	49	89	768	166
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
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3453		1770	3494		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3453		1770	3494		1770	3539	1583
Peak-hour factor, 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)	263	235	64	180	632	123	36	572	53	97	835	180
RTOR Reduction (vph)	0	0	48	0	15	0	0	6	0	0	0	155
Lane Group Flow (vph)	263	235	16	180	740	0	36	619	0	97	835	25
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									
Actuated Green, G (s)	11.7	20.4	20.4	13.7	22.4		4.6	25.4		7.9	28.7	11.7
Effective Green, g (s)	11.7	20.4	20.4	13.7	22.4		4.6	25.4		7.9	28.7	11.7
Actuated g/C Ratio	0.14	0.24	0.24	0.16	0.27		0.06	0.30		0.09	0.34	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	481	865	387	290	927		97	1064		167	1217	222
v/s Ratio Prot	0.08	0.07		c0.10	c0.21		0.02	0.18		c0.05	c0.24	0.02
v/s Ratio Perm			0.01									
v/c Ratio	0.55	0.27	0.04	0.62	0.80		0.37	0.58		0.58	0.69	0.11
Uniform Delay, d1	33.4	25.5	24.0	32.4	28.4		38.0	24.5		36.2	23.5	31.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	0.0	4.1	4.8		2.4	2.3		5.1	3.2	0.2
Delay (s)	34.7	25.7	24.1	36.5	33.2		40.4	26.8		41.2	26.6	31.5
Level of Service	C	C	C	D	C		D	C		D	C	C
Approach Delay (s)		29.7			33.9			27.6			28.7	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			30.1	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			83.4	Sum of lost time (s)				16.0				
Intersection Capacity Utilization			64.5%	ICU Level of Service				C				
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue


















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 		 	 		 	 		
Volume (vph)	321	448	315	89	240	170	87	529	39	130	1133	119	
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	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00	
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3320		1770	3319		3433	3539	1583	3433	3539	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	3320		1770	3319		3433	3539	1583	3433	3539	1583	
Peak-hour factor, 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)	349	487	342	97	261	185	95	575	42	141	1232	129	
RTOR Reduction (vph)	0	115	0	0	141	0	0	0	30	0	0	70	
Lane Group Flow (vph)	349	714	0	97	305	0	95	575	12	141	1232	59	
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases									2			6	
Actuated Green, G (s)	20.5	26.3		8.5	14.3		6.3	25.2	25.2	8.9	27.8	27.8	
Effective Green, g (s)	20.5	26.3		8.5	14.3		6.3	25.2	25.2	8.9	27.8	27.8	
Actuated g/C Ratio	0.24	0.31		0.10	0.17		0.07	0.30	0.30	0.10	0.33	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	427	1028		177	559		254	1050	469	359	1158	518	
v/s Ratio Prot	c0.20	c0.21		0.05	0.09		0.03	0.16		c0.04	c0.35		
v/s Ratio Perm									0.01			0.04	
v/c Ratio	0.82	0.69		0.55	0.55		0.37	0.55	0.03	0.39	1.06	0.11	
Uniform Delay, d1	30.4	25.8		36.4	32.3		37.4	25.1	21.2	35.5	28.6	19.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.5	2.1		3.4	1.1		0.9	2.1	0.1	0.7	45.2	0.4	
Delay (s)	41.9	27.8		39.8	33.4		38.4	27.1	21.3	36.2	73.8	20.4	
Level of Service	D	C		D	C		D	C	C	D	E	C	
Approach Delay (s)		32.0			34.6			28.3			65.7		
Approach LOS		C			C			C			E		
Intersection Summary													
HCM 2000 Control Delay			44.5									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.89										
Actuated Cycle Length (s)			84.9									Sum of lost time (s)	16.0
Intersection Capacity Utilization			77.9%									ICU Level of Service	D
Analysis Period (min)			15										
c	Critical Lane Group												

Level Of Service Computation Report

Cumulative plus Project (Maximum Residential Scenario) Conditions
AM Peak Hour

















HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	74	25	18	268	64	51	33	7	33	79	96
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	24	74	25	18	268	64	51	33	7	33	79	96
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	332			99			440	502	50	444	483	166
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	332			99			440	502	50	444	483	166
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			86	93	99	93	83	89
cM capacity (veh/h)	1224			1492			377	455	1008	455	467	849
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	61	62	152	198	91	33	53	122				
Volume Left	24	0	18	0	51	33	0	0				
Volume Right	0	25	0	64	7	0	0	96				
cSH	1224	1700	1492	1700	424	455	467	722				
Volume to Capacity	0.02	0.04	0.01	0.12	0.21	0.07	0.11	0.17				
Queue Length 95th (ft)	1	0	1	0	20	6	9	15				
Control Delay (s)	3.2	0.0	1.0	0.0	15.8	13.5	13.7	11.0				
Lane LOS	A		A		C	B	B	B				
Approach Delay (s)	1.6		0.4		15.8	12.1						
Approach LOS					C	B						
Intersection Summary												
Average Delay			5.6									
Intersection Capacity Utilization			37.1%		ICU Level of Service				A			
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	4	203	15	0	0	0	0	110	24	63	221	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						4.5		4.5	4.5		
Lane Util. Factor		0.91						0.95		1.00	0.91		
Frt		0.99						0.97		1.00	1.00		
Flt Protected		1.00						1.00		0.95	1.00		
Satd. Flow (prot)		5029						3444		1770	5085		
Flt Permitted		1.00						1.00		0.67	1.00		
Satd. Flow (perm)		5029						3444		1242	5085		
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	
Adj. Flow (vph)	4	203	15	0	0	0	0	110	24	63	221	0	
RTOR Reduction (vph)	0	6	0	0	0	0	0	18	0	0	0	0	
Lane Group Flow (vph)	0	216	0	0	0	0	0	116	0	63	221	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		45.5						19.5		19.5	19.5		
Effective Green, g (s)		45.5						19.5		19.5	19.5		
Actuated g/C Ratio		0.61						0.26		0.26	0.26		
Clearance Time (s)		5.5						4.5		4.5	4.5		
Vehicle Extension (s)		3.0						3.0		3.0	3.0		
Lane Grp Cap (vph)		3050						895		322	1322		
v/s Ratio Prot								0.03			0.04		
v/s Ratio Perm		0.04								c0.05			
v/c Ratio		0.07						0.13		0.20	0.17		
Uniform Delay, d1		6.1						21.3		21.6	21.5		
Progression Factor		1.00						1.25		0.63	0.65		
Incremental Delay, d2		0.0						0.3		1.4	0.3		
Delay (s)		6.1						26.8		15.0	14.1		
Level of Service		A						C		B	B		
Approach Delay (s)		6.1			0.0			26.8			14.3		
Approach LOS		A			A			C			B		
Intersection Summary													
HCM 2000 Control Delay			14.1									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.11										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			29.6%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	0	0	0	97	259	250	11	29	99	0	0	181	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95	
Frt					1.00	0.85		1.00	1.00			1.00	
Flt Protected					0.99	1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3492	1583		1770	1863			3539	
Flt Permitted					0.99	1.00		0.64	1.00			1.00	
Satd. Flow (perm)					3492	1583		1188	1863			3539	
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	
Adj. Flow (vph)	0	0	0	97	259	250	11	29	99	0	0	181	
RTOR Reduction (vph)	0	0	0	0	0	202	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	356	48	0	40	99	0	0	181	
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA	
Protected Phases					8				2			6	
Permitted Phases				8		8	2	2					
Actuated Green, G (s)					14.5	14.5		51.5	51.5			51.5	
Effective Green, g (s)					14.5	14.5		51.5	51.5			51.5	
Actuated g/C Ratio					0.19	0.19		0.69	0.69			0.69	
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5	
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					675	306		815	1279			2430	
v/s Ratio Prot									c0.05			0.05	
v/s Ratio Perm					0.10	0.03		0.03					
v/c Ratio					0.53	0.16		0.05	0.08			0.07	
Uniform Delay, d1					27.2	25.2		3.8	3.9			3.9	
Progression Factor					0.84	0.53		0.52	0.54			0.81	
Incremental Delay, d2					0.7	0.2		0.1	0.1			0.1	
Delay (s)					23.6	13.6		2.1	2.2			3.2	
Level of Service					C	B		A	A			A	
Approach Delay (s)		0.0			19.5				2.2			3.2	
Approach LOS		A			B				A			A	
Intersection Summary													
HCM 2000 Control Delay			13.0		HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.18										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)				9.0				
Intersection Capacity Utilization			29.6%		ICU Level of Service				A				
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

























3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	62
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	62
RTOR Reduction (vph)	19
Lane Group Flow (vph)	43
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	51.5
Effective Green, g (s)	51.5
Actuated g/C Ratio	0.69
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1086
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.04
Uniform Delay, d1	3.8
Progression Factor	0.80
Incremental Delay, d2	0.1
Delay (s)	3.1
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Volume (vph)	53	339	42	53	749	46	177	175	19	50	100	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5001		1770	5041		1770	1835		1770	3539	1583
Flt Permitted	0.24	1.00		0.52	1.00		0.69	1.00		0.64	1.00	1.00
Satd. Flow (perm)	451	5001		964	5041		1283	1835		1184	3539	1583
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
Adj. Flow (vph)	53	339	42	53	749	46	177	175	19	50	100	94
RTOR Reduction (vph)	0	29	0	0	13	0	0	4	0	0	0	37
Lane Group Flow (vph)	53	352	0	53	782	0	177	190	0	50	100	57
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	19.8	19.8		19.8	19.8		45.7	45.7		45.7	45.7	45.7
Effective Green, g (s)	19.8	19.8		19.8	19.8		45.7	45.7		45.7	45.7	45.7
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.61	0.61		0.61	0.61	0.61
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	119	1320		254	1330		781	1118		721	2156	964
v/s Ratio Prot		0.07			c0.16			0.10			0.03	
v/s Ratio Perm	0.12			0.05			c0.14			0.04		0.04
v/c Ratio	0.45	0.27		0.21	0.59		0.23	0.17		0.07	0.05	0.06
Uniform Delay, d1	23.0	21.9		21.5	24.0		6.6	6.4		6.0	5.9	5.9
Progression Factor	1.00	1.00		1.00	1.00		0.67	0.65		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1		0.4	0.7		0.7	0.3		0.2	0.0	0.1
Delay (s)	25.7	22.0		21.9	24.7		5.1	4.5		6.2	5.9	6.1
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		22.4			24.5			4.8			6.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			17.8				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.34									
Actuated Cycle Length (s)			75.0				Sum of lost time (s)				9.5	
Intersection Capacity Utilization			48.4%				ICU Level of Service				A	
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street



















Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations						
Volume (vph)	159	883	479	31	92	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	0.99		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5427	4535		2959	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5427	4535		2959	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	159	883	479	31	92	69
RTOR Reduction (vph)	75	34	6	0	0	0
Lane Group Flow (vph)	68	865	504	0	161	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	55.0	55.0	24.0		21.0	
Effective Green, g (s)	55.0	55.0	24.0		21.0	
Actuated g/C Ratio	0.48	0.48	0.21		0.18	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	616	2595	946		540	
v/s Ratio Prot	0.05	c0.16	c0.11		c0.05	
v/s Ratio Perm						
v/c Ratio	0.11	0.33	0.53		0.30	
Uniform Delay, d1	16.5	18.6	40.5		40.6	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.3	2.1		0.3	
Delay (s)	16.9	19.0	42.6		40.9	
Level of Service	B	B	D		D	
Approach Delay (s)		18.7	42.6		40.9	
Approach LOS		B	D		D	

Intersection Summary

HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

















HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	0	239	289	43	567	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5	5.0	5.0					
Lane Util. Factor					0.91	0.91	0.81	0.81					
Frt					0.95	0.85	1.00	1.00					
Flt Protected					1.00	1.00	0.95	1.00					
Satd. Flow (prot)					2895	1297	1290	5430					
Flt Permitted					1.00	1.00	0.95	1.00					
Satd. Flow (perm)					2895	1297	1290	5430					
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	
Adj. Flow (vph)	0	0	0	0	239	289	43	567	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	52	61	25	9	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	311	104	14	562	0	0	0	0	
Turn Type					NA	Perm	Perm	NA					
Protected Phases					8			2					
Permitted Phases						8	2						
Actuated Green, G (s)					64.0	64.0	41.5	41.5					
Effective Green, g (s)					64.0	64.0	41.5	41.5					
Actuated g/C Ratio					0.56	0.56	0.36	0.36					
Clearance Time (s)					4.5	4.5	5.0	5.0					
Vehicle Extension (s)					3.0	3.0	3.0	3.0					
Lane Grp Cap (vph)					1611	721	465	1959					
v/s Ratio Prot					c0.11								
v/s Ratio Perm						0.08	0.01	0.10					
v/c Ratio					0.19	0.14	0.03	0.29					
Uniform Delay, d1					12.7	12.3	23.7	26.2					
Progression Factor					1.00	1.00	1.95	1.18					
Incremental Delay, d2					0.3	0.4	0.1	0.3					
Delay (s)					12.9	12.7	46.4	31.3					
Level of Service					B	B	D	C					
Approach Delay (s)		0.0			12.9			32.2			0.0		
Approach LOS		A			B			C			A		
Intersection Summary													
HCM 2000 Control Delay			23.3		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.23										
Actuated Cycle Length (s)			115.0		Sum of lost time (s)				9.5				
Intersection Capacity Utilization			46.3%		ICU Level of Service				A				
Analysis Period (min)			15										
c	Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	8	71	51	8	138	113	13	54	0	330	151	66
Peak Hour 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
Hourly flow rate (vph)	8	71	51	8	138	113	13	54	0	330	151	66
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	130	259	67	406	142							
Volume Left (vph)	8	8	13	330	0							
Volume Right (vph)	51	113	0	0	66							
Hadj (s)	-0.19	-0.22	0.07	0.44	-0.29							
Departure Headway (s)	5.8	5.5	6.1	6.2	5.4							
Degree Utilization, x	0.21	0.40	0.11	0.70	0.21							
Capacity (veh/h)	562	608	521	568	642							
Control Delay (s)	10.4	12.1	9.9	20.9	8.7							
Approach Delay (s)	10.4	12.1	9.9	17.7								
Approach LOS	B	B	A	C								
Intersection Summary												
Delay			14.8									
Level of Service			B									
Intersection Capacity Utilization			48.2%	ICU Level of Service	A							
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	2	2	7	22	26	16	405	33	103	429	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	6	2	2	7	22	26	16	405	33	103	429	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											288	
pX, platoon unblocked												
vC, conflicting volume	930	1129	238	877	1136	219	477			438		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	930	1129	238	877	1136	219	477			438		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	100	97	88	97	99			91		
cM capacity (veh/h)	179	181	763	221	179	785	1082			1118		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	10	55	218	236	318	262						
Volume Left	6	7	16	0	103	0						
Volume Right	2	26	0	33	0	48						
cSH	212	293	1082	1700	1118	1700						
Volume to Capacity	0.05	0.19	0.01	0.14	0.09	0.15						
Queue Length 95th (ft)	4	17	1	0	8	0						
Control Delay (s)	22.8	20.1	0.7	0.0	3.4	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	22.8	20.1	0.4		1.9							
Approach LOS	C	C										
Intersection Summary												
Average Delay			2.3									
Intersection Capacity Utilization			42.4%	ICU Level of Service	A							
Analysis Period (min)			15									























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	38	21	5	54	54	46	382	30	102	393	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.95			0.94			0.99			0.96	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1763			1739			3487			3379	
Flt Permitted	0.74	1.00			0.99			0.85			0.80	
Satd. Flow (perm)	1378	1763			1731			2973			2739	
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
Adj. Flow (vph)	34	38	21	5	54	54	46	382	30	102	393	168
RTOR Reduction (vph)	0	12	0	0	31	0	0	7	0	0	44	0
Lane Group Flow (vph)	34	47	0	0	82	0	0	451	0	0	619	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	587	752			738			1347			1241	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.02				c0.05			0.15			c0.23	
v/c Ratio	0.06	0.06			0.11			0.34			0.50	
Uniform Delay, d1	12.6	12.7			12.9			13.2			14.5	
Progression Factor	1.00	1.00			1.00			1.00			0.71	
Incremental Delay, d2	0.2	0.2			0.3			0.7			1.4	
Delay (s)	12.8	12.8			13.2			13.9			11.7	
Level of Service	B	B			B			B			B	
Approach Delay (s)		12.8			13.2			13.9			11.7	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.7			HCM 2000 Level of Service		B				
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			75.0			Sum of lost time (s)		9.0				
Intersection Capacity Utilization			53.4%			ICU Level of Service		A				
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 			
Volume (vph)	931	179	99	0	0	0	0	329	553	548	381	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00		
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1610	3272	1583					3539	1583	3433	1863		
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1610	3272	1583					3539	1583	3433	1863		
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	
Adj. Flow (vph)	931	179	99	0	0	0	0	329	553	548	381	0	
RTOR Reduction (vph)	0	0	70	0	0	0	0	0	177	0	0	0	
Lane Group Flow (vph)	465	645	29	0	0	0	0	329	376	548	381	0	
Turn Type	Split	NA	Prot					NA	Prot	Prot	NA		
Protected Phases	4	4	4					2	2	1	6		
Permitted Phases													
Actuated Green, G (s)	21.6	21.6	21.6					23.5	23.5	16.4	43.4		
Effective Green, g (s)	21.6	21.6	21.6					23.5	23.5	16.4	43.4		
Actuated g/C Ratio	0.29	0.29	0.29					0.31	0.31	0.22	0.58		
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	463	942	455					1108	496	750	1078		
v/s Ratio Prot	c0.29	0.20	0.02					0.09	c0.24	c0.16	0.20		
v/s Ratio Perm													
v/c Ratio	1.00	0.96dl	0.06					0.30	0.76	0.73	0.35		
Uniform Delay, d1	26.7	23.7	19.4					19.5	23.2	27.2	8.4		
Progression Factor	0.94	0.94	0.85					1.24	1.45	1.18	1.56		
Incremental Delay, d2	42.9	2.1	0.1					0.7	10.3	3.5	0.2		
Delay (s)	68.1	24.3	16.6					24.9	44.0	35.7	13.3		
Level of Service	E	C	B					C	D	D	B		
Approach Delay (s)		40.5			0.0			36.9			26.5		
Approach LOS		D			A			D			C		
Intersection Summary													
HCM 2000 Control Delay			35.1									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.84										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			111.8%									ICU Level of Service	H
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													


















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	335	160	533	69	482	0	0	374	46
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	
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.98	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1593	3185	1425	1593	3185			4502	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1593	3185	1425	1593	3185			4502	
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
Adj. Flow (vph)	0	0	0	335	160	533	69	482	0	0	374	46
RTOR Reduction (vph)	0	0	0	0	0	216	0	0	0	0	19	0
Lane Group Flow (vph)	0	0	0	335	160	317	69	482	0	0	401	0
Turn Type				Split	NA	Prot	Prot	NA			NA	
Protected Phases				8	8	8	5	2			6	
Permitted Phases												
Actuated Green, G (s)				27.0	27.0	27.0	15.2	40.0			20.8	
Effective Green, g (s)				27.0	27.0	27.0	15.2	40.0			20.8	
Actuated g/C Ratio				0.36	0.36	0.36	0.20	0.53			0.28	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				573	1146	513	322	1698			1248	
v/s Ratio Prot				0.21	0.05	c0.22	0.04	c0.15			c0.09	
v/s Ratio Perm												
v/c Ratio				0.58	0.14	0.62	0.21	0.28			0.32	
Uniform Delay, d1				19.5	16.2	19.7	24.9	9.6			21.5	
Progression Factor				1.00	1.00	1.00	0.62	0.80			1.00	
Incremental Delay, d2				1.5	0.1	2.2	0.2	0.3			0.7	
Delay (s)				21.0	16.2	22.0	15.7	7.9			22.2	
Level of Service				C	B	C	B	A			C	
Approach Delay (s)		0.0			20.7			8.9			22.2	
Approach LOS		A			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			17.8		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					12.0		
Intersection Capacity Utilization			111.8%		ICU Level of Service					H		
Analysis Period (min)			15									
c	Critical Lane Group											






















HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	632	130	0	0	0	0	424	83	105	544	0
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	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.98		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4550	1425					3107		1593	3185	
Flt Permitted		0.99	1.00					1.00		0.41	1.00	
Satd. Flow (perm)		4550	1425					3107		693	3185	
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
Adj. Flow (vph)	84	632	130	0	0	0	0	424	83	105	544	0
RTOR Reduction (vph)	0	0	80	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	0	716	50	0	0	0	0	480	0	105	544	0
Turn Type	Split	NA	Perm					NA		pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			4							6		
Actuated Green, G (s)		23.0	23.0					21.0		29.0	29.0	
Effective Green, g (s)		23.0	23.0					21.0		29.0	29.0	
Actuated g/C Ratio		0.38	0.38					0.35		0.48	0.48	
Clearance Time (s)		4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		1744	546					1087		394	1539	
v/s Ratio Prot		c0.16						c0.15		0.02	c0.17	
v/s Ratio Perm			0.03							0.11		
v/c Ratio		0.41	0.09					0.44		0.27	0.35	
Uniform Delay, d1		13.5	11.8					15.0		11.0	9.7	
Progression Factor		1.00	1.00					1.00		0.49	0.48	
Incremental Delay, d2		0.2	0.1					1.3		0.3	0.6	
Delay (s)		13.7	11.9					16.3		5.7	5.3	
Level of Service		B	B					B		A	A	
Approach Delay (s)		13.4			0.0			16.3			5.3	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			11.5					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		12.0		
Intersection Capacity Utilization			54.2%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												





















HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					  			 			  		
Volume (vph)	0	0	0	150	500	106	98	376	0	0	481	42	
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		
Lane Util. Factor					0.95		1.00	0.95			0.91		
Flt					0.98		1.00	1.00			0.99		
Flt Protected					0.99		0.95	1.00			1.00		
Satd. Flow (prot)					3088		1593	3185			4522		
Flt Permitted					0.99		0.43	1.00			1.00		
Satd. Flow (perm)					3088		717	3185			4522		
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	
Adj. Flow (vph)	0	0	0	150	500	106	98	376	0	0	481	42	
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	17	0	
Lane Group Flow (vph)	0	0	0	0	734	0	98	376	0	0	506	0	
Turn Type				Split	NA		pm+pt	NA			NA		
Protected Phases				8	8		5	2			6		
Permitted Phases							2						
Actuated Green, G (s)					26.0		26.0	26.0			18.0		
Effective Green, g (s)					26.0		26.0	26.0			18.0		
Actuated g/C Ratio					0.43		0.43	0.43			0.30		
Clearance Time (s)					4.0		4.0	4.0			4.0		
Lane Grp Cap (vph)					1338		369	1380			1356		
v/s Ratio Prot					c0.24		0.02	c0.12			c0.11		
v/s Ratio Perm							0.10						
v/c Ratio					0.55		0.27	0.27			0.37		
Uniform Delay, d1					12.6		11.7	10.9			16.6		
Progression Factor					1.00		0.28	0.34			1.90		
Incremental Delay, d2					1.6		1.6	0.4			0.7		
Delay (s)					14.3		4.9	4.1			32.1		
Level of Service					B		A	A			C		
Approach Delay (s)		0.0			14.3			4.3			32.1		
Approach LOS		A			B			A			C		
Intersection Summary													
HCM 2000 Control Delay			16.9		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.47										
Actuated Cycle Length (s)			60.0		Sum of lost time (s)						12.0		
Intersection Capacity Utilization			54.2%		ICU Level of Service						A		
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	3	278	84	1	327	111	0	367	29	0	647	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frt		0.97			0.96			0.99			0.98	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3074			3064			3150			3124	
Flt Permitted		0.95			0.95			1.00			1.00	
Satd. Flow (perm)		2926			2924			3150			3124	
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
Adj. Flow (vph)	3	278	84	1	327	111	0	367	29	0	647	95
RTOR Reduction (vph)	0	47	0	0	55	0	0	10	0	0	20	0
Lane Group Flow (vph)	0	318	0	0	384	0	0	386	0	0	723	0
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.5			21.5			27.5			27.5	
Effective Green, g (s)		21.5			21.5			27.5			27.5	
Actuated g/C Ratio		0.36			0.36			0.46			0.46	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Lane Grp Cap (vph)		1048			1047			1443			1431	
v/s Ratio Prot								0.12			c0.23	
v/s Ratio Perm		0.11			c0.13							
v/c Ratio		0.30			0.37			0.27			0.50	
Uniform Delay, d1		13.9			14.2			10.0			11.5	
Progression Factor		1.00			1.00			1.37			1.00	
Incremental Delay, d2		0.7			1.0			0.4			1.3	
Delay (s)		14.6			15.2			14.1			12.7	
Level of Service		B			B			B			B	
Approach Delay (s)		14.6			15.2			14.1			12.7	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.9								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			47.2%								ICU Level of Service	A
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	26	15	5	21	0	0	0	0	14	14	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	26	15	5	21	0	0	0	0	14	14	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	21			41			84	64	34	64	72	21
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	21			41			84	64	34	64	72	21
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	98	99
cM capacity (veh/h)	1595			1568			879	824	1040	927	816	1056
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	41	26	21	19								
Volume Left	0	5	14	0								
Volume Right	15	0	0	12								
cSH	1700	1568	887	953								
Volume to Capacity	0.02	0.00	0.02	0.02								
Queue Length 95th (ft)	0	0	2	2								
Control Delay (s)	0.0	1.4	9.2	8.9								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.4	9.0									
Approach LOS			A									
Intersection Summary												
Average Delay			3.7									
Intersection Capacity Utilization			15.4%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	28	13	15	35	0	0	0	0	7	3	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	28	13	15	35	0	0	0	0	7	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked												
vC, conflicting volume	35			41			103	100	34	100	106	35
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			41			103	100	34	100	106	35
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	100	100
cM capacity (veh/h)	1576			1568			867	783	1039	876	777	1038
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	41	50	8	4								
Volume Left	0	15	7	0								
Volume Right	13	0	0	2								
cSH	1700	1568	856	907								
Volume to Capacity	0.02	0.01	0.01	0.00								
Queue Length 95th (ft)	0	1	1	0								
Control Delay (s)	0.0	2.2	9.2	9.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	2.2	9.2									
Approach LOS			A									
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			19.3%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

17: Webster Street & 1st Street / Embarcadero


















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	75	157	195	77	54	74
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	75	157	195	77	54	74
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		251	150	307	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		251	150	307	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	95		67	89	91	93
cM capacity (veh/h)	1623		587	707	579	1085

Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	75	157	272	54	74
Volume Left	75	0	195	0	0
Volume Right	0	157	0	0	74
cSH	1623	1700	616	579	1085
Volume to Capacity	0.05	0.09	0.44	0.09	0.07
Queue Length 95th (ft)	4	0	56	8	5
Control Delay (s)	7.3	0.0	15.4	11.9	8.6
Lane LOS	A		C	B	A
Approach Delay (s)	2.4		15.4	10.0	
Approach LOS			C	A	

Intersection Summary					
Average Delay			9.5		
Intersection Capacity Utilization			32.3%	ICU Level of Service	A
Analysis Period (min)			15		





















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	691	0	0	0	0	0	613	1376	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0	5.0			
Lane Util. Factor		0.91						0.91	0.88			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4533						4577	2508			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4533						4577	2508			
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
Adj. Flow (vph)	165	691	0	0	0	0	0	613	1376	0	0	0
RTOR Reduction (vph)	0	67	0	0	0	0	0	0	131	0	0	0
Lane Group Flow (vph)	0	789	0	0	0	0	0	613	1245	0	0	0
Turn Type	Perm	NA						NA	custom			
Protected Phases		2						1				
Permitted Phases	2								5			
Actuated Green, G (s)		27.0						23.0	29.0			
Effective Green, g (s)		27.0						23.0	29.0			
Actuated g/C Ratio		0.45						0.38	0.48			
Clearance Time (s)		5.0						5.0	5.0			
Vehicle Extension (s)		3.0						3.0	3.0			
Lane Grp Cap (vph)		2039						1754	1212			
v/s Ratio Prot								0.13				
v/s Ratio Perm		0.17							c0.50			
v/c Ratio		0.39						0.35	1.03			
Uniform Delay, d1		11.0						13.2	15.5			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.6						0.6	33.0			
Delay (s)		11.5						13.7	48.5			
Level of Service		B						B	D			
Approach Delay (s)		11.5			0.0			37.8			0.0	
Approach LOS		B			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			29.9					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			100.0%					ICU Level of Service		F		
Analysis Period (min)			15									
c	Critical Lane Group											




















HCM Signalized Intersection Capacity Analysis

19: Jackson Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Volume (vph)	311	438	491	0	0	0	0	259	41	66	89	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5						5.5		5.5	5.5	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frt		0.94						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		4724						1828		1770	1863	
Flt Permitted		0.99						1.00		0.51	1.00	
Satd. Flow (perm)		4724						1828		944	1863	
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
Adj. Flow (vph)	311	438	491	0	0	0	0	259	41	66	89	0
RTOR Reduction (vph)	0	158	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	1082	0	0	0	0	0	292	0	66	89	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		34.5						29.5		29.5	29.5	
Effective Green, g (s)		34.5						29.5		29.5	29.5	
Actuated g/C Ratio		0.46						0.39		0.39	0.39	
Clearance Time (s)		5.5						5.5		5.5	5.5	
Lane Grp Cap (vph)		2173						719		371	732	
v/s Ratio Prot								c0.16			0.05	
v/s Ratio Perm		0.23								0.07		
v/c Ratio		0.50						0.41		0.18	0.12	
Uniform Delay, d1		14.2						16.4		14.8	14.5	
Progression Factor		1.00						1.00		0.67	0.69	
Incremental Delay, d2		0.8						1.7		1.0	0.3	
Delay (s)		15.0						18.1		11.0	10.4	
Level of Service		B						B		B	B	
Approach Delay (s)		15.0			0.0			18.1			10.7	
Approach LOS		B			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.2					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		11.0		
Intersection Capacity Utilization			79.4%					ICU Level of Service		D		
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	2	311	56	321	281	0	0	196	1408	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			5.5	4.0	
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425	
Flt Permitted				0.95	1.00	1.00	0.63	1.00			1.00	1.00	
Satd. Flow (perm)				1593	1676	1425	1064	1676			1676	1425	
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	
Adj. Flow (vph)	0	0	0	2	311	56	321	281	0	0	196	1408	
RTOR Reduction (vph)	0	0	0	0	0	41	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	2	311	15	321	281	0	0	196	1408	
Turn Type				Split	NA	Perm	Perm	NA			NA	Free	
Protected Phases				8	8			2			6		
Permitted Phases						8	2					Free	
Actuated Green, G (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Effective Green, g (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Actuated g/C Ratio				0.26	0.26	0.26	0.59	0.59			0.59	1.00	
Clearance Time (s)				5.5	5.5	5.5	5.5	5.5			5.5		
Lane Grp Cap (vph)				414	435	370	631	994			994	1425	
v/s Ratio Prot				0.00	0.19			0.17			0.12		
v/s Ratio Perm						0.01	0.30					c0.99	
v/c Ratio				0.00	0.71	0.04	0.51	0.28			0.20	0.99	
Uniform Delay, d1				20.6	25.2	20.7	8.9	7.5			7.0	0.0	
Progression Factor				1.00	1.00	1.00	1.18	1.16			1.00	1.00	
Incremental Delay, d2				0.0	9.7	0.2	2.6	0.6			0.4	21.2	
Delay (s)				20.6	34.9	20.9	13.1	9.3			7.5	21.2	
Level of Service				C	C	C	B	A			A	C	
Approach Delay (s)		0.0			32.7			11.3			19.5		
Approach LOS		A			C			B			B		
Intersection Summary													
HCM 2000 Control Delay			19.5		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			1.16										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					11.0			
Intersection Capacity Utilization			79.4%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													
















HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	529	1328	0	0	0	0	354	90	28	356	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.92	0.85					0.97			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		3969	1226					1631			1670	
Flt Permitted		1.00	1.00					1.00			0.96	
Satd. Flow (perm)		3969	1226					1631			1605	
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
Adj. Flow (vph)	38	529	1328	0	0	0	0	354	90	28	356	0
RTOR Reduction (vph)	0	316	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	915	664	0	0	0	0	429	0	0	384	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		19.0	60.0					32.0			32.0	
Effective Green, g (s)		19.0	60.0					32.0			32.0	
Actuated g/C Ratio		0.32	1.00					0.53			0.53	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1256	1226					869			856	
v/s Ratio Prot		c0.23						0.26				
v/s Ratio Perm			c0.54								0.24	
v/c Ratio		0.89dr	0.54					0.49			0.45	
Uniform Delay, d1		18.2	0.0					8.9			8.6	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		3.7	1.7					2.0			1.7	
Delay (s)		21.9	1.7					10.9			10.3	
Level of Service		C	A					B			B	
Approach Delay (s)		14.9			0.0			10.9			10.3	
Approach LOS		B			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.6					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			77.2%					ICU Level of Service		D		
Analysis Period (min)			15									
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												



















HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	547	22	0	0	0	0	0	0	589	134	0	
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		
Lane Util. Factor		0.91								0.91	0.91		
Frt		0.99								1.00	1.00		
Flt Protected		1.00								0.95	0.97		
Satd. Flow (prot)		5056								1610	3278		
Flt Permitted		1.00								0.95	0.97		
Satd. Flow (perm)		5056								1610	3278		
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	
Adj. Flow (vph)	0	547	22	0	0	0	0	0	0	589	134	0	
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	71	71	0	
Lane Group Flow (vph)	0	560	0	0	0	0	0	0	0	223	358	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		16.0								22.0	22.0		
Effective Green, g (s)		16.0								22.0	22.0		
Actuated g/C Ratio		0.35								0.48	0.48		
Clearance Time (s)		4.0								4.0	4.0		
Lane Grp Cap (vph)		1758								770	1567		
v/s Ratio Prot		c0.11											
v/s Ratio Perm										c0.14	0.11		
v/c Ratio		0.32								0.29	0.23		
Uniform Delay, d1		11.0								7.3	7.0		
Progression Factor		1.00								1.00	1.00		
Incremental Delay, d2		0.5								0.9	0.3		
Delay (s)		11.5								8.2	7.4		
Level of Service		B								A	A		
Approach Delay (s)		11.5			0.0			0.0			7.7		
Approach LOS		B			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			9.4									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.30										
Actuated Cycle Length (s)			46.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			33.2%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													















HCM Signalized Intersection Capacity Analysis

23: Madison Street & 6th Street




















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Volume (vph)	0	0	0	34	180	0	0	0	0	0	738	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frt					1.00						0.96	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					4541						4406	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					4541						4406	
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
Adj. Flow (vph)	0	0	0	34	180	0	0	0	0	0	738	244
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	125	0
Lane Group Flow (vph)	0	0	0	0	191	0	0	0	0	0	857	0
Turn Type				Split	NA							NA
Protected Phases				8	8							6
Permitted Phases												
Actuated Green, G (s)					15.0							22.0
Effective Green, g (s)					15.0							22.0
Actuated g/C Ratio					0.33							0.49
Clearance Time (s)					4.0							4.0
Lane Grp Cap (vph)					1513							2154
v/s Ratio Prot					c0.04							c0.19
v/s Ratio Perm												
v/c Ratio					0.13							0.40
Uniform Delay, d1					10.4							7.3
Progression Factor					0.99							1.00
Incremental Delay, d2					0.1							0.6
Delay (s)					10.5							7.8
Level of Service					B							A
Approach Delay (s)		0.0			10.5			0.0				7.8
Approach LOS		A			B			A				A
Intersection Summary												
HCM 2000 Control Delay			8.3		HCM 2000 Level of Service						A	
HCM 2000 Volume to Capacity ratio			0.29									
Actuated Cycle Length (s)			45.0		Sum of lost time (s)						8.0	
Intersection Capacity Utilization			33.2%		ICU Level of Service						A	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	435	254	0	0	0	0	0	0	142	707	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0									4.0		
Lane Util. Factor		0.86									0.91		
Frt		0.94									1.00		
Flt Protected		1.00									0.99		
Satd. Flow (prot)		5448									4539		
Flt Permitted		1.00									0.99		
Satd. Flow (perm)		5448									4539		
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	
Adj. Flow (vph)	0	435	254	0	0	0	0	0	0	142	707	0	
RTOR Reduction (vph)	0	98	0	0	0	0	0	0	0	0	51	0	
Lane Group Flow (vph)	0	591	0	0	0	0	0	0	0	0	798	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		23.0									29.0		
Effective Green, g (s)		23.0									29.0		
Actuated g/C Ratio		0.38									0.48		
Clearance Time (s)		4.0									4.0		
Vehicle Extension (s)		3.0									3.0		
Lane Grp Cap (vph)		2088									2193		
v/s Ratio Prot		c0.11											
v/s Ratio Perm											0.18		
v/c Ratio		0.28									0.36		
Uniform Delay, d1		12.8									9.7		
Progression Factor		0.52									1.00		
Incremental Delay, d2		0.2									0.5		
Delay (s)		6.8									10.2		
Level of Service		A									B		
Approach Delay (s)		6.8			0.0			0.0			10.2		
Approach LOS		A			A			A			B		
Intersection Summary													
HCM 2000 Control Delay			8.7									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.33										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			40.0%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Volume (veh/h)	197	0	79	2	0	0	382	579	0	0	325	164
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	197	0	79	2	0	0	382	579	0	0	325	164
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											563	
pX, platoon unblocked												
vC, conflicting volume	1460	1750	244	1584	1832	290	489			579		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1460	1750	244	1584	1832	290	489			579		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	90	96	100	100	64			100		
cM capacity (veh/h)	65	55	756	47	49	707	1070			991		
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	197	79	382	290	290	217	272					
Volume Left	197	0	382	0	0	0	0					
Volume Right	0	79	0	0	0	0	164					
cSH	65	756	1070	1700	1700	1700	1700					
Volume to Capacity	3.02	0.10	0.36	0.17	0.17	0.13	0.16					
Queue Length 95th (ft)	Err	9	41	0	0	0	0					
Control Delay (s)	Err	10.3	10.2	0.0	0.0	0.0	0.0					
Lane LOS	F	B	B									
Approach Delay (s)	7139.9		4.1			0.0						
Approach LOS	F											
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			Err%	ICU Level of Service	H							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #25
Oak Street / Embarcadero
Cumulative plus Residential
AM Peak Hour

PART A or PART B satisfied YES NO

PART A PART A satisfied YES NO

(All parts 1, 2, and 3 below must be satisfied)

1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and
 Yes No 547.4

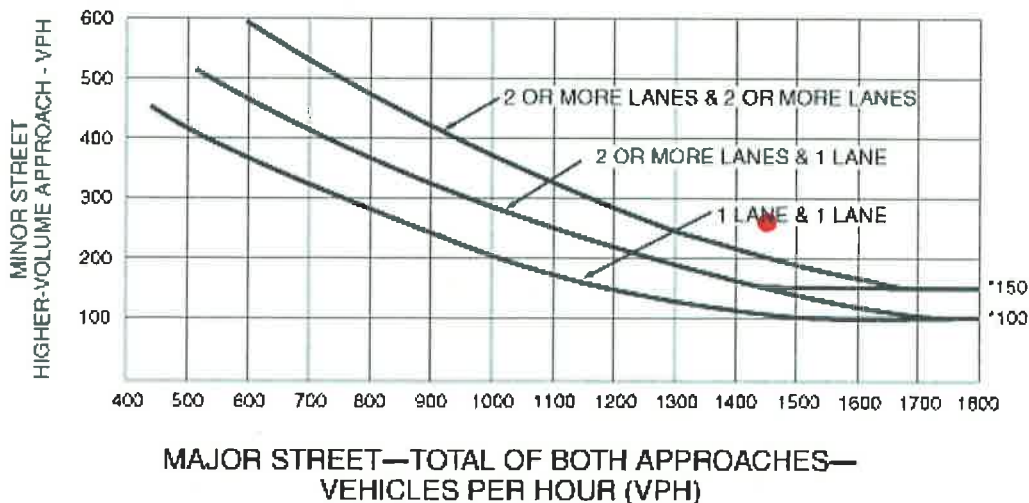
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
 Yes No 276

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
 Yes No 1728

PART B PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street























Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	71	94	153	821	571	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.92		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1683		1770	1863	1863	1583
Flt Permitted	0.98		0.42	1.00	1.00	1.00
Satd. Flow (perm)	1683		775	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	71	94	153	821	571	98
RTOR Reduction (vph)	82	0	0	0	0	27
Lane Group Flow (vph)	83	0	153	821	571	71
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	7.0		39.7	39.7	39.7	39.7
Effective Green, g (s)	7.0		39.7	39.7	39.7	39.7
Actuated g/C Ratio	0.13		0.73	0.73	0.73	0.73
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	215		562	1352	1352	1148
v/s Ratio Prot	c0.05			c0.44	0.31	
v/s Ratio Perm			0.20			0.04
v/c Ratio	0.39		0.27	0.61	0.42	0.06
Uniform Delay, d1	21.9		2.6	3.7	3.0	2.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2		1.2	2.0	1.0	0.1
Delay (s)	23.0		3.8	5.7	3.9	2.3
Level of Service	C		A	A	A	A
Approach Delay (s)	23.0			5.4	3.7	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			
















HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  			 	
Volume (vph)	269	682	155	0	0	0	0	624	284	3	225	0
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	
Lane Util. Factor		0.91						0.95			1.00	
Frt		0.98						0.95			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		4919						3373			1862	
Flt Permitted		0.99						1.00			0.99	
Satd. Flow (perm)		4919						3373			1840	
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
Adj. Flow (vph)	269	682	155	0	0	0	0	624	284	3	225	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	117	0	0	0	0
Lane Group Flow (vph)	0	1056	0	0	0	0	0	791	0	0	228	0
Turn Type	Split	NA						NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases										6		
Actuated Green, G (s)		22.0						15.0			15.0	
Effective Green, g (s)		22.0						15.0			15.0	
Actuated g/C Ratio		0.49						0.33			0.33	
Clearance Time (s)		4.0						4.0			4.0	
Lane Grp Cap (vph)		2404						1124			613	
v/s Ratio Prot		c0.21						c0.23				
v/s Ratio Perm											0.12	
v/c Ratio		0.44						0.70			0.37	
Uniform Delay, d1		7.5						13.1			11.4	
Progression Factor		1.00						1.00			1.18	
Incremental Delay, d2		0.6						3.7			1.7	
Delay (s)		8.1						16.8			15.2	
Level of Service		A						B			B	
Approach Delay (s)		8.1			0.0			16.8			15.2	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.3					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			45.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			55.1%					ICU Level of Service		B		
Analysis Period (min)			15									
c Critical Lane Group												















HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street


















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	145	61	527	150	498	0	0	0	0	
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					
Lane Util. Factor					0.91	0.91		0.95					
Frt					0.92	0.85		1.00					
Flt Protected					0.98	1.00		0.99					
Satd. Flow (prot)					2752	1297		3149					
Flt Permitted					0.98	1.00		0.99					
Satd. Flow (perm)					2752	1297		3149					
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	
Adj. Flow (vph)	0	0	0	145	61	527	150	498	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	78	78	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	392	185	0	648	0	0	0	0	
Turn Type				Split	NA	Perm	Split	NA					
Protected Phases				8	8		2	2					
Permitted Phases						8							
Actuated Green, G (s)					22.0	22.0		15.0					
Effective Green, g (s)					22.0	22.0		15.0					
Actuated g/C Ratio					0.49	0.49		0.33					
Clearance Time (s)					4.0	4.0		4.0					
Lane Grp Cap (vph)					1345	634		1049					
v/s Ratio Prot					0.14			c0.21					
v/s Ratio Perm						c0.14							
v/c Ratio					0.29	0.29		0.62					
Uniform Delay, d1					6.9	6.9		12.6					
Progression Factor					1.00	1.00		0.82					
Incremental Delay, d2					0.5	1.2		2.1					
Delay (s)					7.4	8.0		12.5					
Level of Service					A	A		B					
Approach Delay (s)		0.0			7.6			12.5			0.0		
Approach LOS		A			A			B			A		
Intersection Summary													
HCM 2000 Control Delay			9.9		HCM 2000 Level of Service				A				
HCM 2000 Volume to Capacity ratio			0.42										
Actuated Cycle Length (s)			45.0		Sum of lost time (s)				8.0				
Intersection Capacity Utilization			51.0%		ICU Level of Service				A				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	416	0	0	0	0	0	948	102	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5708						4510				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5708						4510				
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
Adj. Flow (vph)	108	416	0	0	0	0	0	948	102	0	0	0
RTOR Reduction (vph)	0	25	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	0	499	0	0	0	0	0	1028	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		27.0						24.0				
Effective Green, g (s)		27.0						24.0				
Actuated g/C Ratio		0.45						0.40				
Clearance Time (s)		4.5						4.5				
Lane Grp Cap (vph)		2568						1804				
v/s Ratio Prot								c0.23				
v/s Ratio Perm		0.09										
v/c Ratio		0.19						0.57				
Uniform Delay, d1		9.9						14.0				
Progression Factor		1.26						1.00				
Incremental Delay, d2		0.2						1.3				
Delay (s)		12.7						15.3				
Level of Service		B						B				
Approach Delay (s)		12.7			0.0			15.3			0.0	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			14.4					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)			9.0	
Intersection Capacity Utilization			70.0%					ICU Level of Service			C	
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	70	431	19	20	649	436	75	45	56	390	16	137
Peak Hour 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
Hourly flow rate (vph)	70	431	19	20	649	436	75	45	56	390	16	137
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	520	669	436	176	543							
Volume Left (vph)	70	20	0	75	390							
Volume Right (vph)	19	0	436	56	137							
Hadj (s)	0.04	0.05	-0.67	-0.07	0.03							
Departure Headway (s)	8.3	8.6	7.9	9.5	8.2							
Degree Utilization, x	1.20	1.60	0.95	0.46	1.23							
Capacity (veh/h)	439	423	452	367	436							
Control Delay (s)	136.2	300.5	58.6	20.3	149.4							
Approach Delay (s)	136.2	205.0		20.3	149.4							
Approach LOS	F	F		C	F							
Intersection Summary												
Delay			163.0									
Level of Service			F									
Intersection Capacity Utilization			110.4%	ICU Level of Service	H							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

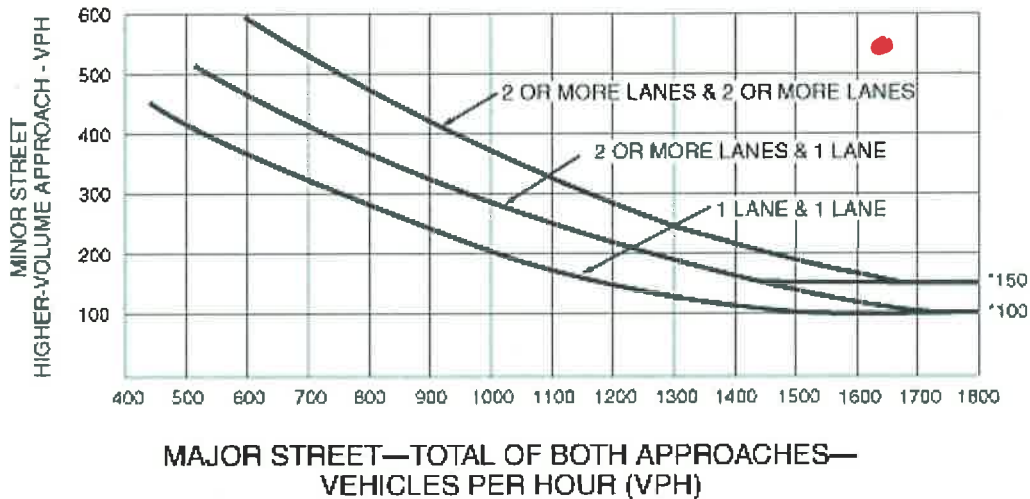
Intersection #30
5th Avenue / Embarcadero
Cumulative plus Residential
AM Peak Hour

PART B

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.























Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.




























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	193	68	38	334	106	77	862	37	58	637	344
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
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3411		1770	3517		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3411		1770	3517		1770	3539	1583
Peak-hour factor, 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)	292	210	74	41	363	115	84	937	40	63	692	374
RTOR Reduction (vph)	0	0	50	0	31	0	0	3	0	0	0	315
Lane Group Flow (vph)	292	210	24	41	447	0	84	974	0	63	692	59
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									
Actuated Green, G (s)	12.3	25.6	25.6	4.6	17.9		7.3	25.4		6.8	24.9	12.3
Effective Green, g (s)	12.3	25.6	25.6	4.6	17.9		7.3	25.4		6.8	24.9	12.3
Actuated g/C Ratio	0.16	0.33	0.33	0.06	0.23		0.09	0.32		0.09	0.32	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	538	1155	516	103	778		164	1139		153	1123	248
v/s Ratio Prot	c0.09	0.06		0.02	c0.13		c0.05	c0.28		0.04	0.20	0.04
v/s Ratio Perm			0.02									
v/c Ratio	0.54	0.18	0.05	0.40	0.57		0.51	0.86		0.41	0.62	0.24
Uniform Delay, d1	30.5	18.9	18.1	35.6	26.9		33.9	24.8		33.9	22.7	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.0	2.5	1.0		2.7	8.3		1.8	2.5	0.5
Delay (s)	31.6	19.0	18.1	38.1	27.9		36.5	33.1		35.7	25.2	29.4
Level of Service	C	B	B	D	C		D	C		D	C	C
Approach Delay (s)		25.3			28.7			33.3			27.2	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.1			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			78.4			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			62.0%			ICU Level of Service				B		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue


















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 			 		 	 		
Volume (vph)	152	283	124	65	338	162	119	897	47	125	511	57	
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	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00	
Frt	1.00	0.95		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583	
Peak-hour factor, 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)	165	308	135	71	367	176	129	975	51	136	555	62	
RTOR Reduction (vph)	0	46	0	0	59	0	0	0	35	0	0	43	
Lane Group Flow (vph)	165	397	0	71	484	0	129	975	16	136	555	19	
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases									2			6	
Actuated Green, G (s)	12.9	23.6		7.3	18.0		8.5	24.4	24.4	8.7	24.6	24.6	
Effective Green, g (s)	12.9	23.6		7.3	18.0		8.5	24.4	24.4	8.7	24.6	24.6	
Actuated g/C Ratio	0.16	0.30		0.09	0.22		0.11	0.30	0.30	0.11	0.31	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	285	996		161	757		364	1079	482	373	1088	486	
v/s Ratio Prot	c0.09	0.12		0.04	c0.14		0.04	c0.28		c0.04	0.16		
v/s Ratio Perm									0.01			0.01	
v/c Ratio	0.58	0.40		0.44	0.64		0.35	0.90	0.03	0.36	0.51	0.04	
Uniform Delay, d1	31.0	22.5		34.4	28.1		33.2	26.7	19.5	33.1	22.8	19.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	0.3		1.9	1.8		0.6	12.2	0.1	0.6	1.7	0.2	
Delay (s)	33.9	22.8		36.3	29.8		33.8	38.9	19.6	33.7	24.5	19.6	
Level of Service	C	C		D	C		C	D	B	C	C	B	
Approach Delay (s)		25.8			30.6			37.5			25.7		
Approach LOS		C			C			D			C		
Intersection Summary													
HCM 2000 Control Delay			31.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.69										
Actuated Cycle Length (s)			80.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			64.6%									ICU Level of Service	C
Analysis Period (min)			15										
c	Critical Lane Group												

Level Of Service Computation Report

Cumulative plus Project (Maximum Residential Scenario) Conditions
PM Peak Hour

























HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	277	22	16	166	101	50	138	30	50	61	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	53	277	22	16	166	101	50	138	30	50	61	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	267			299			580	693	150	592	654	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	267			299			580	693	150	592	654	134
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			84	60	97	80	83	96
cM capacity (veh/h)	1294			1259			318	346	870	250	364	891
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	192	160	99	184	218	50	41	60				
Volume Left	53	0	16	0	50	50	0	0				
Volume Right	0	22	0	101	30	0	0	40				
cSH	1294	1700	1259	1700	369	250	364	599				
Volume to Capacity	0.04	0.09	0.01	0.11	0.59	0.20	0.11	0.10				
Queue Length 95th (ft)	3	0	1	0	91	18	9	8				
Control Delay (s)	2.4	0.0	1.4	0.0	27.9	23.0	16.1	11.7				
Lane LOS	A		A		D	C	C	B				
Approach Delay (s)	1.3		0.5		27.9	16.6						
Approach LOS					D	C						
Intersection Summary												
Average Delay			9.2									
Intersection Capacity Utilization			46.7%		ICU Level of Service				A			
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  		  	  	
Volume (vph)	6	488	22	0	0	0	0	271	32	105	110	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5						4.5		4.5	4.5	
Lane Util. Factor		0.91						0.95		1.00	0.91	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5050						3483		1770	5085	
Flt Permitted		1.00						1.00		0.50	1.00	
Satd. Flow (perm)		5050						3483		929	5085	
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
Adj. Flow (vph)	6	488	22	0	0	0	0	271	32	105	110	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	511	0	0	0	0	0	293	0	105	110	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		60.5						19.5		19.5	19.5	
Effective Green, g (s)		60.5						19.5		19.5	19.5	
Actuated g/C Ratio		0.67						0.22		0.22	0.22	
Clearance Time (s)		5.5						4.5		4.5	4.5	
Vehicle Extension (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		3394						754		201	1101	
v/s Ratio Prot								0.08			0.02	
v/s Ratio Perm		0.10								c0.11		
v/c Ratio		0.15						0.39		0.52	0.10	
Uniform Delay, d1		5.4						30.1		31.1	28.2	
Progression Factor		1.00						1.00		0.86	0.85	
Incremental Delay, d2		0.1						1.5		9.4	0.2	
Delay (s)		5.5						31.7		36.2	24.2	
Level of Service		A						C		D	C	
Approach Delay (s)		5.5			0.0			31.7			30.1	
Approach LOS		A			A			C			C	
Intersection Summary												
HCM 2000 Control Delay			18.3					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.24									
Actuated Cycle Length (s)			90.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			37.8%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	0	0	0	32	156	284	17	42	242	0	0	174	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95	
Frt					1.00	0.85		1.00	1.00			1.00	
Flt Protected					0.99	1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3509	1583		1770	1863			3539	
Flt Permitted					0.99	1.00		0.64	1.00			1.00	
Satd. Flow (perm)					3509	1583		1196	1863			3539	
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	
Adj. Flow (vph)	0	0	0	32	156	284	17	42	242	0	0	174	
RTOR Reduction (vph)	0	0	0	0	0	248	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	188	36	0	59	242	0	0	174	
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA	
Protected Phases					8				2			6	
Permitted Phases				8		8	2	2					
Actuated Green, G (s)					11.3	11.3		69.7	69.7			69.7	
Effective Green, g (s)					11.3	11.3		69.7	69.7			69.7	
Actuated g/C Ratio					0.13	0.13		0.77	0.77			0.77	
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5	
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					440	198		926	1442			2740	
v/s Ratio Prot									c0.13			0.05	
v/s Ratio Perm					0.05	0.02		0.05					
v/c Ratio					0.43	0.18		0.06	0.17			0.06	
Uniform Delay, d1					36.4	35.2		2.4	2.6			2.4	
Progression Factor					1.04	2.05		0.13	0.48			1.00	
Incremental Delay, d2					0.7	0.4		0.1	0.2			0.0	
Delay (s)					38.5	72.7		0.4	1.5			2.5	
Level of Service					D	E		A	A			A	
Approach Delay (s)		0.0			59.1				1.3			2.4	
Approach LOS		A			E				A			A	
Intersection Summary													
HCM 2000 Control Delay			29.3		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.20										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)				9.0				
Intersection Capacity Utilization			37.8%		ICU Level of Service				A				
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

























3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	35
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	35
RTOR Reduction (vph)	8
Lane Group Flow (vph)	27
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	69.7
Effective Green, g (s)	69.7
Actuated g/C Ratio	0.77
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1225
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	2.3
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	2.4
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	991	89	44	424	46	216	263	54	66	116	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5022		1770	5011		1770	1815		1770	3539	1583
Flt Permitted	0.47	1.00		0.20	1.00		0.68	1.00		0.48	1.00	1.00
Satd. Flow (perm)	881	5022		374	5011		1264	1815		888	3539	1583
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
Adj. Flow (vph)	132	991	89	44	424	46	216	263	54	66	116	74
RTOR Reduction (vph)	0	12	0	0	16	0	0	9	0	0	0	42
Lane Group Flow (vph)	132	1068	0	44	454	0	216	308	0	66	116	32
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Effective Green, g (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	404	2304		171	2299		542	779		381	1519	679
v/s Ratio Prot		c0.21			0.09			0.17			0.03	
v/s Ratio Perm	0.15			0.12			c0.17			0.07		0.02
v/c Ratio	0.33	0.46		0.26	0.20		0.40	0.40		0.17	0.08	0.05
Uniform Delay, d1	14.6	15.8		14.1	13.7		16.7	16.7		14.9	14.3	14.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.7		3.6	0.2		2.2	1.5		0.2	0.0	0.0
Delay (s)	16.8	16.5		17.7	13.9		18.9	18.2		15.2	14.3	14.1
Level of Service	B	B		B	B		B	B		B	B	B
Approach Delay (s)		16.5			14.2			18.5			14.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			16.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)		9.5			
Intersection Capacity Utilization			61.1%				ICU Level of Service		B			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street



















Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations						
Volume (vph)	194	613	1384	44	76	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	1.00		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5416	4556		2984	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5416	4556		2984	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	194	613	1384	44	76	41
RTOR Reduction (vph)	111	65	3	0	0	0
Lane Group Flow (vph)	44	587	1425	0	117	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	24.0	24.0	29.2		16.8	
Effective Green, g (s)	24.0	24.0	29.2		16.8	
Actuated g/C Ratio	0.28	0.28	0.34		0.20	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	364	1529	1565		589	
v/s Ratio Prot	0.03	c0.11	c0.31		c0.04	
v/s Ratio Perm						
v/c Ratio	0.12	0.38	0.91		0.20	
Uniform Delay, d1	22.7	24.6	26.6		28.5	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.7	9.5		0.2	
Delay (s)	23.3	25.3	36.1		28.6	
Level of Service	C	C	D		C	
Approach Delay (s)		24.9	36.1		28.6	
Approach LOS		C	D		C	

Intersection Summary

HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

















HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	249	802	36	1769	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5	4.5	5.0	5.0				
Lane Util. Factor					0.91	0.91	0.81	0.81				
Frt					0.91	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					2769	1297	1290	5431				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					2769	1297	1290	5431				
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
Adj. Flow (vph)	0	0	0	0	249	802	36	1769	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	15	17	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	649	386	15	1763	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					34.9	34.9	40.6	40.6				
Effective Green, g (s)					34.9	34.9	40.6	40.6				
Actuated g/C Ratio					0.41	0.41	0.48	0.48				
Clearance Time (s)					4.5	4.5	5.0	5.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					1136	532	616	2594				
v/s Ratio Prot					0.23							
v/s Ratio Perm						c0.30	0.01	0.32				
v/c Ratio					0.57	0.72	0.02	0.68				
Uniform Delay, d1					19.3	21.0	11.7	17.2				
Progression Factor					1.00	1.00	0.02	0.27				
Incremental Delay, d2					0.7	4.9	0.0	1.0				
Delay (s)					20.0	25.9	0.3	5.5				
Level of Service					B	C	A	A				
Approach Delay (s)		0.0			22.2			5.4			0.0	
Approach LOS		A			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.6		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			85.0		Sum of lost time (s)						9.5	
Intersection Capacity Utilization			70.6%		ICU Level of Service						C	
Analysis Period (min)			15									
c	Critical Lane Group											

















HCM Unsignalized Intersection Capacity Analysis

7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	27	179	63	12	120	97	30	146	17	333	268	85
Peak Hour 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
Hourly flow rate (vph)	27	179	63	12	120	97	30	146	17	333	268	85
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	269	229	193	467	219							
Volume Left (vph)	27	12	30	333	0							
Volume Right (vph)	63	97	17	0	85							
Hadj (s)	-0.09	-0.21	0.01	0.39	-0.24							
Departure Headway (s)	6.9	6.9	7.1	7.1	6.4							
Degree Utilization, x	0.51	0.44	0.38	0.92	0.39							
Capacity (veh/h)	494	496	469	504	550							
Control Delay (s)	16.9	15.1	14.3	47.3	12.3							
Approach Delay (s)	16.9	15.1	14.3	36.1								
Approach LOS	C	C	B	E								
Intersection Summary												
Delay			25.8									
Level of Service			D									
Intersection Capacity Utilization			63.0%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (veh/h)	26	20	10	13	20	49	59	632	161	135	591	84	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour 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	
Hourly flow rate (vph)	26	20	10	13	20	49	59	632	161	135	591	84	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None						
Median storage (veh)													
Upstream signal (ft)												288	
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90		0.90						
vC, conflicting volume	1396	1814	338	1416	1776	396	675						
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1219	1683	44	1241	1640	396	418						
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1						
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2						
p0 queue free %	65	70	99	83	72	92	94						
cM capacity (veh/h)	74	66	916	76	70	603	1024						
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2							
Volume Total	56	82	375	477	430	380							
Volume Left	26	13	59	0	135	0							
Volume Right	10	49	0	161	0	84							
cSH	84	153	1024	1700	824	1700							
Volume to Capacity	0.66	0.54	0.06	0.28	0.16	0.22							
Queue Length 95th (ft)	78	67	5	0	15	0							
Control Delay (s)	107.6	53.1	1.9	0.0	4.6	0.0							
Lane LOS	F	F	A		A								
Approach Delay (s)	107.6	53.1	0.8		2.4								
Approach LOS	F	F											
Intersection Summary													
Average Delay			7.3										
Intersection Capacity Utilization			64.5%	ICU Level of Service	C								
Analysis Period (min)			15										

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #8
Broadway / 2nd Street
Cumulative plus Residential
PM Peak Hour

PART A or PART B satisfied YES NO

PART A PART A satisfied YES NO

(All parts 1, 2, and 3 below must be satisfied)

1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and
 Yes No 2.4

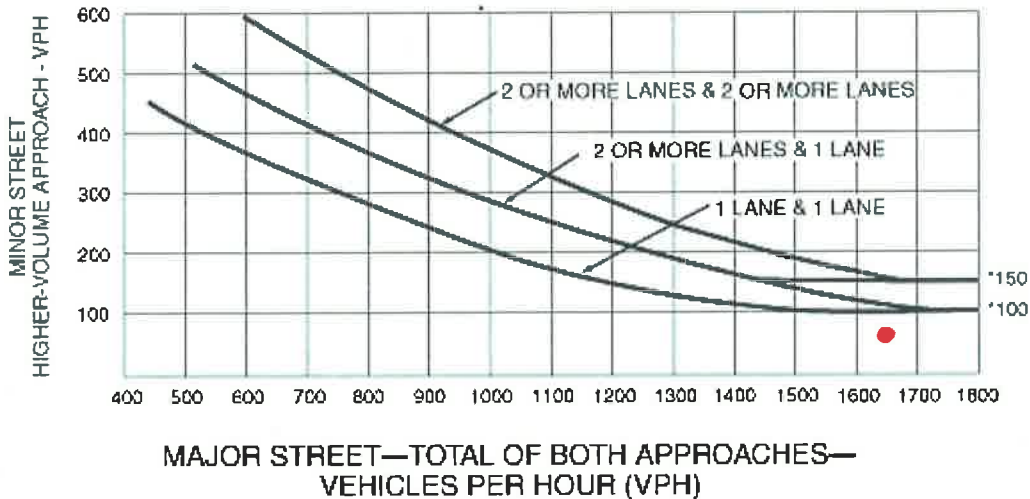
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
 Yes No 56

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
 Yes No 1,985

PART B PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.


















Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	135	28	10	120	116	53	392	18	106	535	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.97			0.94			0.99			0.97	
Flt Protected	0.95	1.00			1.00			0.99			0.99	
Satd. Flow (prot)	1770	1815			1741			3499			3410	
Flt Permitted	0.58	1.00			0.99			0.81			0.82	
Satd. Flow (perm)	1089	1815			1725			2849			2803	
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
Adj. Flow (vph)	106	135	28	10	120	116	53	392	18	106	535	162
RTOR Reduction (vph)	0	10	0	0	43	0	0	4	0	0	30	0
Lane Group Flow (vph)	106	153	0	0	203	0	0	459	0	0	773	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	464	774			736			1291			1270	
v/s Ratio Prot		0.08										
v/s Ratio Perm	0.10				c0.12			0.16			c0.28	
v/c Ratio	0.23	0.20			0.28			0.36			0.61	
Uniform Delay, d1	13.7	13.5			14.0			13.4			15.5	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.1	0.6			0.9			0.8			2.2	
Delay (s)	14.8	14.0			14.9			14.1			17.7	
Level of Service	B	B			B			B			B	
Approach Delay (s)		14.3			14.9			14.1			17.7	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.9					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			73.8%					ICU Level of Service		D		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		 						 		 				
Volume (vph)	1162	340	84	0	0	0	0	457	534	879	458	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5			
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00			
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00			
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00			
Satd. Flow (prot)	1610	3287	1583					3539	1583	3433	1863			
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00			
Satd. Flow (perm)	1610	3287	1583					3539	1583	3433	1863			
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		
Adj. Flow (vph)	1162	340	84	0	0	0	0	457	534	879	458	0		
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	128	0	0	0		
Lane Group Flow (vph)	581	921	28	0	0	0	0	457	406	879	458	0		
Turn Type	Split	NA	Prot					NA	Prot	Prot	NA			
Protected Phases	4	4	4					2	2	1	6			
Permitted Phases														
Actuated Green, G (s)	30.5	30.5	30.5					24.5	24.5	21.5	49.5			
Effective Green, g (s)	30.5	30.5	30.5					24.5	24.5	21.5	49.5			
Actuated g/C Ratio	0.34	0.34	0.34					0.27	0.27	0.24	0.55			
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	545	1113	536					963	430	820	1024			
v/s Ratio Prot	c0.36	0.28	0.02					0.13	c0.26	c0.26	0.25			
v/s Ratio Perm														
v/c Ratio	1.07	1.02dl	0.05					0.47	0.94	1.07	0.45			
Uniform Delay, d1	29.8	27.3	20.0					27.4	32.1	34.2	12.1			
Progression Factor	0.91	0.90	0.77					1.00	1.00	1.33	1.92			
Incremental Delay, d2	57.3	5.2	0.0					1.7	31.4	49.7	0.3			
Delay (s)	84.4	29.9	15.5					29.0	63.5	95.2	23.4			
Level of Service	F	C	B					C	E	F	C			
Approach Delay (s)		49.1			0.0			47.6			70.6			
Approach LOS		D			A			D			E			
Intersection Summary														
HCM 2000 Control Delay			56.1									HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio			1.03											
Actuated Cycle Length (s)			90.0								13.5		Sum of lost time (s)	
Intersection Capacity Utilization			140.4%										ICU Level of Service	H
Analysis Period (min)			15											
dl Defacto Left Lane. Recode with 1 though lane as a left lane.														
c Critical Lane Group														


















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	306	175	791	103	389	0	0	904	41
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	
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1593	3185	1425	1593	3185			4547	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1593	3185	1425	1593	3185			4547	
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
Adj. Flow (vph)	0	0	0	306	175	791	103	389	0	0	904	41
RTOR Reduction (vph)	0	0	0	0	0	222	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	306	175	569	103	389	0	0	940	0
Turn Type				Split	NA	Prot	Prot	NA			NA	
Protected Phases				8	8	8	5	2			6	
Permitted Phases												
Actuated Green, G (s)				37.6	37.6	37.6	15.2	44.4			25.2	
Effective Green, g (s)				37.6	37.6	37.6	15.2	44.4			25.2	
Actuated g/C Ratio				0.42	0.42	0.42	0.17	0.49			0.28	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				665	1330	595	269	1571			1273	
v/s Ratio Prot				0.19	0.05	c0.40	c0.06	0.12			c0.21	
v/s Ratio Perm												
v/c Ratio				0.46	0.13	0.96	0.38	0.25			0.74	
Uniform Delay, d1				18.9	16.1	25.4	33.2	13.2			29.4	
Progression Factor				1.00	1.00	1.00	0.85	1.03			1.00	
Incremental Delay, d2				0.5	0.0	26.2	0.5	0.2			3.9	
Delay (s)				19.4	16.2	51.6	28.8	13.7			33.3	
Level of Service				B	B	D	C	B			C	
Approach Delay (s)		0.0			39.0			16.9			33.3	
Approach LOS		A			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			33.0		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)					12.0		
Intersection Capacity Utilization			140.4%		ICU Level of Service					H		
Analysis Period (min)			15									
c	Critical Lane Group											
























HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	813	314	0	0	0	0	482	77	127	924	0
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	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.98		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4532	1425					3119		1593	3185	
Flt Permitted		0.99	1.00					1.00		0.38	1.00	
Satd. Flow (perm)		4532	1425					3119		634	3185	
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
Adj. Flow (vph)	199	813	314	0	0	0	0	482	77	127	924	0
RTOR Reduction (vph)	0	0	56	0	0	0	0	21	0	0	0	0
Lane Group Flow (vph)	0	1012	258	0	0	0	0	538	0	127	924	0
Turn Type	Split	NA	Perm					NA		pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			4							6		
Actuated Green, G (s)		23.0	23.0					21.0		29.0	29.0	
Effective Green, g (s)		23.0	23.0					21.0		29.0	29.0	
Actuated g/C Ratio		0.38	0.38					0.35		0.48	0.48	
Clearance Time (s)		4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		1737	546					1091		370	1539	
v/s Ratio Prot		c0.22						0.17		0.02	c0.29	
v/s Ratio Perm			0.18							0.14		
v/c Ratio		0.58	0.47					0.49		0.34	0.60	
Uniform Delay, d1		14.7	13.9					15.3		12.1	11.3	
Progression Factor		1.00	1.00					1.00		0.71	0.77	
Incremental Delay, d2		0.5	0.6					1.6		0.4	1.3	
Delay (s)		15.2	14.6					16.9		9.0	10.0	
Level of Service		B	B					B		A	B	
Approach Delay (s)		15.0			0.0			16.9			9.9	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.6					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		12.0		
Intersection Capacity Utilization			70.8%					ICU Level of Service			C	
Analysis Period (min)			15									
c	Critical Lane Group											





















HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					  		 	  			  		
Volume (vph)	0	0	0	215	692	127	133	478	0	0	802	109	
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		
Lane Util. Factor					0.95		1.00	0.95			0.91		
Flt					0.98		1.00	1.00			0.98		
Flt Protected					0.99		0.95	1.00			1.00		
Satd. Flow (prot)					3094		1593	3185			4495		
Flt Permitted					0.99		0.22	1.00			1.00		
Satd. Flow (perm)					3094		377	3185			4495		
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	
Adj. Flow (vph)	0	0	0	215	692	127	133	478	0	0	802	109	
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	29	0	
Lane Group Flow (vph)	0	0	0	0	1016	0	133	478	0	0	882	0	
Turn Type				Split	NA		pm+pt	NA			NA		
Protected Phases				8	8		5	2			6		
Permitted Phases							2						
Actuated Green, G (s)					26.0		26.0	26.0			18.0		
Effective Green, g (s)					26.0		26.0	26.0			18.0		
Actuated g/C Ratio					0.43		0.43	0.43			0.30		
Clearance Time (s)					4.0		4.0	4.0			4.0		
Lane Grp Cap (vph)					1340		244	1380			1348		
v/s Ratio Prot					c0.33		c0.04	0.15			c0.20		
v/s Ratio Perm							0.20						
v/c Ratio					0.76		0.55	0.35			0.65		
Uniform Delay, d1					14.3		17.7	11.3			18.3		
Progression Factor					1.00		0.46	0.49			1.53		
Incremental Delay, d2					4.1		7.4	0.6			1.5		
Delay (s)					18.4		15.5	6.1			29.5		
Level of Service					B		B	A			C		
Approach Delay (s)		0.0			18.4			8.2			29.5		
Approach LOS		A			B			A			C		
Intersection Summary													
HCM 2000 Control Delay			19.9		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.71										
Actuated Cycle Length (s)			60.0		Sum of lost time (s)						12.0		
Intersection Capacity Utilization			70.8%		ICU Level of Service						C		
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	6	328	112	5	582	175	2	566	36	0	998	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frt		0.96			0.97			0.99			0.98	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3063			3075			3156			3131	
Flt Permitted		0.94			0.95			0.95			1.00	
Satd. Flow (perm)		2894			2928			3004			3131	
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
Adj. Flow (vph)	6	328	112	5	582	175	2	566	36	0	998	127
RTOR Reduction (vph)	0	29	0	0	46	0	0	7	0	0	16	0
Lane Group Flow (vph)	0	417	0	0	716	0	0	597	0	0	1109	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		23.5			23.5			25.5			25.5	
Effective Green, g (s)		23.5			23.5			25.5			25.5	
Actuated g/C Ratio		0.39			0.39			0.42			0.42	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Lane Grp Cap (vph)		1133			1146			1276			1330	
v/s Ratio Prot											c0.35	
v/s Ratio Perm		0.14			c0.24			0.20				
v/c Ratio		0.37			0.62			0.47			0.83	
Uniform Delay, d1		13.0			14.7			12.4			15.4	
Progression Factor		1.00			1.00			1.41			1.00	
Incremental Delay, d2		0.9			2.6			1.1			6.3	
Delay (s)		13.9			17.3			18.6			21.6	
Level of Service		B			B			B			C	
Approach Delay (s)		13.9			17.3			18.6			21.6	
Approach LOS		B			B			B			C	
Intersection Summary												
HCM 2000 Control Delay			18.7								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			72.4%								ICU Level of Service	C
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	87	39	18	83	0	0	0	0	9	29	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	87	39	18	83	0	0	0	0	9	29	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	83			126			258	226	106	226	245	83
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			126			258	226	106	226	245	83
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	96	98
cM capacity (veh/h)	1514			1460			653	665	948	723	649	976
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	126	101	24	32								
Volume Left	0	18	9	0								
Volume Right	39	0	0	18								
cSH	1700	1460	675	797								
Volume to Capacity	0.07	0.01	0.03	0.04								
Queue Length 95th (ft)	0	1	3	3								
Control Delay (s)	0.0	1.4	10.5	9.7								
Lane LOS		A	B	A								
Approach Delay (s)	0.0	1.4	10.0									
Approach LOS			B									
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			25.7%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	210	12	27	223	0	0	0	0	12	18	74
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	210	12	27	223	0	0	0	0	12	18	74
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked												
vC, conflicting volume	223			222			576	493	216	493	499	223
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	223			222			576	493	216	493	499	223
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	97	96	91
cM capacity (veh/h)	1346			1347			372	467	824	479	464	817
Direction, Lane #												
	EB 1	WB 1	SB 1	SB 2								
Volume Total	222	250	21	83								
Volume Left	0	27	12	0								
Volume Right	12	0	0	74								
cSH	1700	1347	472	754								
Volume to Capacity	0.13	0.02	0.04	0.11								
Queue Length 95th (ft)	0	2	3	9								
Control Delay (s)	0.0	1.0	13.0	10.4								
Lane LOS		A	B	B								
Approach Delay (s)	0.0	1.0	10.9									
Approach LOS			B									
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			38.3%		ICU Level of Service		A					
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

17: Webster Street & 1st Street / Embarcadero















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	103	210	217	125	112	63
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	103	210	217	125	112	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		325	206	416	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		325	206	416	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	94		53	81	77	94
cM capacity (veh/h)	1623		465	647	494	1085

Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	103	210	342	112	63
Volume Left	103	0	217	0	0
Volume Right	0	210	0	0	63
cSH	1623	1700	519	494	1085
Volume to Capacity	0.06	0.12	0.66	0.23	0.06
Queue Length 95th (ft)	5	0	119	22	5
Control Delay (s)	7.4	0.0	24.4	14.4	8.5
Lane LOS	A		C	B	A
Approach Delay (s)	2.4		24.4	12.3	
Approach LOS			C	B	

Intersection Summary			
Average Delay		13.6	
Intersection Capacity Utilization		37.6%	ICU Level of Service A
Analysis Period (min)		15	

















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑						↑↑↑	↑↑			
Volume (vph)	334	1529	0	0	0	0	0	686	1212	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0	5.0			
Lane Util. Factor		0.91						0.91	0.88			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4536						4577	2508			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4536						4577	2508			
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
Adj. Flow (vph)	334	1529	0	0	0	0	0	686	1212	0	0	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	22	0	0	0
Lane Group Flow (vph)	0	1847	0	0	0	0	0	686	1190	0	0	0
Turn Type	Perm	NA						NA	custom			
Protected Phases		2						1				
Permitted Phases	2								5			
Actuated Green, G (s)		34.0						16.0	34.0			
Effective Green, g (s)		34.0						16.0	34.0			
Actuated g/C Ratio		0.57						0.27	0.57			
Clearance Time (s)		5.0						5.0	5.0			
Vehicle Extension (s)		3.0						3.0	3.0			
Lane Grp Cap (vph)		2570						1220	1421			
v/s Ratio Prot								0.15				
v/s Ratio Perm		0.41							c0.47			
v/c Ratio		0.72						0.56	0.84			
Uniform Delay, d1		9.5						19.0	10.7			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		1.8						1.9	6.0			
Delay (s)		11.3						20.9	16.8			
Level of Service		B						C	B			
Approach Delay (s)		11.3			0.0			18.2			0.0	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			14.8					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			95.8%					ICU Level of Service		F		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

19: Jackson Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	298	622	462	0	0	0	0	670	39	106	122	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.5		5.5	5.5		
Lane Util. Factor		0.91						1.00		1.00	1.00		
Frt		0.95						0.99		1.00	1.00		
Flt Protected		0.99						1.00		0.95	1.00		
Satd. Flow (prot)		4779						1849		1770	1863		
Flt Permitted		0.99						1.00		0.14	1.00		
Satd. Flow (perm)		4779						1849		253	1863		
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	
Adj. Flow (vph)	298	622	462	0	0	0	0	670	39	106	122	0	
RTOR Reduction (vph)	0	120	0	0	0	0	0	3	0	0	0	0	
Lane Group Flow (vph)	0	1262	0	0	0	0	0	706	0	106	122	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		34.5						29.5		29.5	29.5		
Effective Green, g (s)		34.5						29.5		29.5	29.5		
Actuated g/C Ratio		0.46						0.39		0.39	0.39		
Clearance Time (s)		5.5						5.5		5.5	5.5		
Lane Grp Cap (vph)		2198						727		99	732		
v/s Ratio Prot								0.38			0.07		
v/s Ratio Perm		0.26								c0.42			
v/c Ratio		0.57						0.97		1.07	0.17		
Uniform Delay, d1		14.9						22.3		22.8	14.8		
Progression Factor		1.00						1.00		0.69	0.70		
Incremental Delay, d2		1.1						27.0		110.0	0.5		
Delay (s)		16.0						49.4		125.7	10.8		
Level of Service		B						D		F	B		
Approach Delay (s)		16.0			0.0			49.4			64.2		
Approach LOS		B			A			D			E		
Intersection Summary													
HCM 2000 Control Delay			30.9									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.80										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			111.4%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	11	389	53	453	434	0	0	253	514	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			5.5	4.0	
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425	
Flt Permitted				0.95	1.00	1.00	0.60	1.00			1.00	1.00	
Satd. Flow (perm)				1593	1676	1425	1010	1676			1676	1425	
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	
Adj. Flow (vph)	0	0	0	11	389	53	453	434	0	0	253	514	
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	11	389	14	453	434	0	0	253	514	
Turn Type				Split	NA	Perm	Perm	NA			NA	Free	
Protected Phases				8	8			2			6		
Permitted Phases						8	2					Free	
Actuated Green, G (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Effective Green, g (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Actuated g/C Ratio				0.26	0.26	0.26	0.59	0.59			0.59	1.00	
Clearance Time (s)				5.5	5.5	5.5	5.5	5.5			5.5		
Lane Grp Cap (vph)				414	435	370	599	994			994	1425	
v/s Ratio Prot				0.01	c0.23			0.26			0.15		
v/s Ratio Perm						0.01	c0.45					0.36	
v/c Ratio				0.03	0.89	0.04	0.76	0.44			0.25	0.36	
Uniform Delay, d1				20.7	26.8	20.7	11.2	8.4			7.3	0.0	
Progression Factor				1.00	1.00	1.00	0.60	0.60			1.00	1.00	
Incremental Delay, d2				0.1	23.4	0.2	4.4	0.7			0.6	0.7	
Delay (s)				20.8	50.2	20.9	11.1	5.7			7.9	0.7	
Level of Service				C	D	C	B	A			A	A	
Approach Delay (s)		0.0			46.1			8.5			3.1		
Approach LOS		A			D			A			A		
Intersection Summary													
HCM 2000 Control Delay			14.6		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.80										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					11.0			
Intersection Capacity Utilization			111.4%		ICU Level of Service					H			
Analysis Period (min)			15										
c Critical Lane Group													






















HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	1079	522	0	0	0	0	313	144	36	338	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.98	0.85					0.96			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		4241	1226					1605			1668	
Flt Permitted		1.00	1.00					1.00			0.93	
Satd. Flow (perm)		4241	1226					1605			1567	
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
Adj. Flow (vph)	41	1079	522	0	0	0	0	313	144	36	338	0
RTOR Reduction (vph)	0	26	0	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	1245	371	0	0	0	0	431	0	0	374	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		27.0	60.0					24.0			24.0	
Effective Green, g (s)		27.0	60.0					24.0			24.0	
Actuated g/C Ratio		0.45	1.00					0.40			0.40	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1908	1226					642			626	
v/s Ratio Prot		c0.29						c0.27				
v/s Ratio Perm			0.30								0.24	
v/c Ratio		0.65	0.30					0.67			0.60	
Uniform Delay, d1		12.8	0.0					14.8			14.2	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		1.8	0.6					5.5			4.2	
Delay (s)		14.6	0.6					20.3			18.4	
Level of Service		B	A					C			B	
Approach Delay (s)		11.4			0.0			20.3			18.4	
Approach LOS		B			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			14.1								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	9.0
Intersection Capacity Utilization			89.0%								ICU Level of Service	E
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  								  	  		
Volume (vph)	0	725	35	0	0	0	0	0	0	931	150	0	
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		
Lane Util. Factor		0.91								0.91	0.91		
Frt		0.99								1.00	1.00		
Flt Protected		1.00								0.95	0.96		
Satd. Flow (prot)		5050								1610	3267		
Flt Permitted		1.00								0.95	0.96		
Satd. Flow (perm)		5050								1610	3267		
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	
Adj. Flow (vph)	0	725	35	0	0	0	0	0	0	931	150	0	
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	35	35	0	
Lane Group Flow (vph)	0	749	0	0	0	0	0	0	0	430	581	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		16.0								22.0	22.0		
Effective Green, g (s)		16.0								22.0	22.0		
Actuated g/C Ratio		0.35								0.48	0.48		
Clearance Time (s)		4.0								4.0	4.0		
Lane Grp Cap (vph)		1756								770	1562		
v/s Ratio Prot		c0.15											
v/s Ratio Perm										c0.27	0.18		
v/c Ratio		0.43								0.56	0.37		
Uniform Delay, d1		11.5								8.5	7.6		
Progression Factor		1.00								1.00	1.00		
Incremental Delay, d2		0.8								2.9	0.7		
Delay (s)		12.2								11.5	8.3		
Level of Service		B								B	A		
Approach Delay (s)		12.2			0.0			0.0			9.7		
Approach LOS		B			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			10.7									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.50										
Actuated Cycle Length (s)			46.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			42.3%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

23: Madison Street & 6th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	
Volume (vph)	0	0	0	18	210	0	0	0	0	0	1108	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frt					1.00						0.97	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					4559						4460	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					4559						4460	
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
Adj. Flow (vph)	0	0	0	18	210	0	0	0	0	0	1108	227
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	70	0
Lane Group Flow (vph)	0	0	0	0	212	0	0	0	0	0	1265	0
Turn Type				Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases												
Actuated Green, G (s)					15.0						22.0	
Effective Green, g (s)					15.0						22.0	
Actuated g/C Ratio					0.33						0.49	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1519						2180	
v/s Ratio Prot					c0.05						c0.28	
v/s Ratio Perm												
v/c Ratio					0.14						0.58	
Uniform Delay, d1					10.5						8.2	
Progression Factor					0.88						1.00	
Incremental Delay, d2					0.1						1.1	
Delay (s)					9.3						9.3	
Level of Service					A						A	
Approach Delay (s)		0.0			9.3			0.0			9.3	
Approach LOS		A			A			A			A	















Intersection Summary

HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		




















c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	1045	342	0	0	0	0	0	0	309	913	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0									4.0		
Lane Util. Factor		0.86									0.91		
Frt		0.96									1.00		
Flt Protected		1.00									0.99		
Satd. Flow (prot)		5554									4520		
Flt Permitted		1.00									0.99		
Satd. Flow (perm)		5554									4520		
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	
Adj. Flow (vph)	0	1045	342	0	0	0	0	0	0	309	913	0	
RTOR Reduction (vph)	0	49	0	0	0	0	0	0	0	0	17	0	
Lane Group Flow (vph)	0	1338	0	0	0	0	0	0	0	0	1205	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		24.0									28.0		
Effective Green, g (s)		24.0									28.0		
Actuated g/C Ratio		0.40									0.47		
Clearance Time (s)		4.0									4.0		
Vehicle Extension (s)		3.0									3.0		
Lane Grp Cap (vph)		2221									2109		
v/s Ratio Prot		c0.24											
v/s Ratio Perm											0.27		
v/c Ratio		0.60									0.57		
Uniform Delay, d1		14.2									11.6		
Progression Factor		0.39									1.00		
Incremental Delay, d2		1.0									1.1		
Delay (s)		6.6									12.8		
Level of Service		A									B		
Approach Delay (s)		6.6			0.0			0.0			12.8		
Approach LOS		A			A			A			B		
Intersection Summary													
HCM 2000 Control Delay			9.5									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.59										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			56.4%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Volume (veh/h)	209	0	76	5	0	1	273	679	0	0	736	290
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	209	0	76	5	0	1	273	679	0	0	736	290
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											563	
pX, platoon unblocked												
vC, conflicting volume	1768	2106	513	1669	2251	340	1026			679		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1768	2106	513	1669	2251	340	1026			679		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	85	86	100	100	59			100		
cM capacity (veh/h)	36	30	506	37	24	656	673			909		
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	209	76	273	340	340	491	535					
Volume Left	209	0	273	0	0	0	0					
Volume Right	0	76	0	0	0	0	290					
cSH	36	506	673	1700	1700	1700	1700					
Volume to Capacity	5.78	0.15	0.41	0.20	0.20	0.29	0.31					
Queue Length 95th (ft)	Err	13	49	0	0	0	0					
Control Delay (s)	Err	13.4	14.0	0.0	0.0	0.0	0.0					
Lane LOS	F	B	B									
Approach Delay (s)	7336.2		4.0			0.0						
Approach LOS	F											
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			Err%	ICU Level of Service	H							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #25
Oak Street / Embarcadero
Cumulative plus Residential
PM Peak Hour

PART A or PART B satisfied YES NO

PART A **PART A satisfied** YES NO

(All parts 1, 2, and 3 below must be satisfied)

1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and
 Yes No 580.8

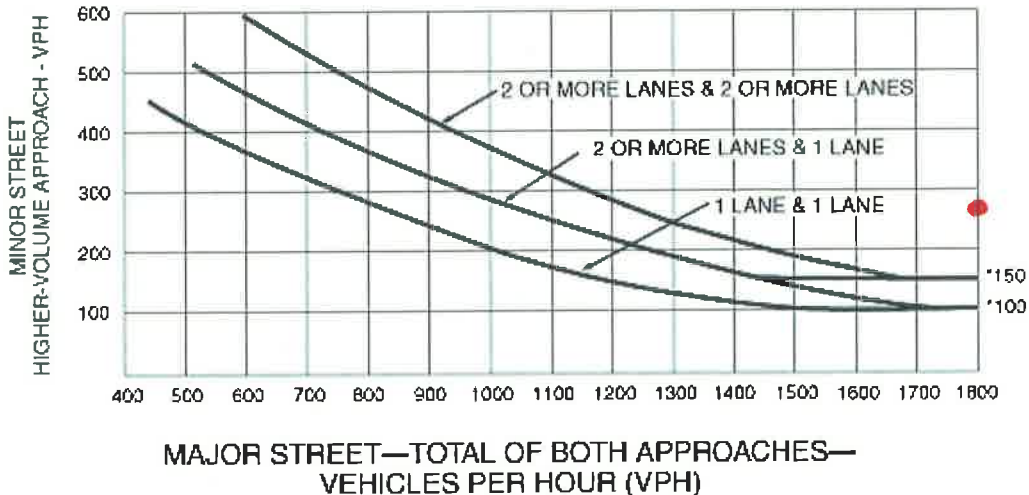
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
 Yes No 285

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
 Yes No 2269

PART B **PART B satisfied** YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



1978/285

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street






















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	141	77	136	935	986	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1718		1770	1863	1863	1583
Flt Permitted	0.97		0.15	1.00	1.00	1.00
Satd. Flow (perm)	1718		282	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	141	77	136	935	986	203
RTOR Reduction (vph)	38	0	0	0	0	68
Lane Group Flow (vph)	180	0	136	935	986	135
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	11.0		37.7	37.7	37.7	37.7
Effective Green, g (s)	11.0		37.7	37.7	37.7	37.7
Actuated g/C Ratio	0.19		0.66	0.66	0.66	0.66
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	333		187	1238	1238	1052
v/s Ratio Prot	c0.10			0.50	c0.53	
v/s Ratio Perm			0.48			0.09
v/c Ratio	0.54		0.73	0.76	0.80	0.13
Uniform Delay, d1	20.6		6.2	6.4	6.8	3.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8		21.8	4.3	5.4	0.3
Delay (s)	22.4		28.0	10.7	12.1	3.7
Level of Service	C		C	B	B	A
Approach Delay (s)	22.4			12.9	10.7	
Approach LOS	C			B	B	

Intersection Summary

HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			
















HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  						  					
Volume (vph)	246	1016	140	0	0	0	0	894	349	6	284	0	
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		
Lane Util. Factor		0.91						0.95			1.00		
Frt		0.99						0.96			1.00		
Flt Protected		0.99						1.00			1.00		
Satd. Flow (prot)		4966						3390			1861		
Flt Permitted		0.99						1.00			0.69		
Satd. Flow (perm)		4966						3390			1292		
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	
Adj. Flow (vph)	246	1016	140	0	0	0	0	894	349	6	284	0	
RTOR Reduction (vph)	0	30	0	0	0	0	0	45	0	0	0	0	
Lane Group Flow (vph)	0	1372	0	0	0	0	0	1198	0	0	290	0	
Turn Type	Split	NA						NA		Perm	NA		
Protected Phases	4	4						2			6		
Permitted Phases										6			
Actuated Green, G (s)		22.0						15.0			15.0		
Effective Green, g (s)		22.0						15.0			15.0		
Actuated g/C Ratio		0.49						0.33			0.33		
Clearance Time (s)		4.0						4.0			4.0		
Lane Grp Cap (vph)		2427						1130			430		
v/s Ratio Prot		c0.28						c0.35					
v/s Ratio Perm											0.22		
v/c Ratio		0.57						1.06			0.67		
Uniform Delay, d1		8.1						15.0			12.9		
Progression Factor		1.00						1.00			1.25		
Incremental Delay, d2		1.0						44.2			8.0		
Delay (s)		9.1						59.2			24.0		
Level of Service		A						E			C		
Approach Delay (s)		9.1			0.0			59.2			24.0		
Approach LOS		A			A			E			C		
Intersection Summary													
HCM 2000 Control Delay			31.8									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.77										
Actuated Cycle Length (s)			45.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			70.3%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													















HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	221	85	506	163	655	0	0	0	0
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				
Lane Util. Factor					0.91	0.91		0.95				
Frt					0.93	0.85		1.00				
Flt Protected					0.98	1.00		0.99				
Satd. Flow (prot)					2791	1297		3154				
Flt Permitted					0.98	1.00		0.99				
Satd. Flow (perm)					2791	1297		3154				
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
Adj. Flow (vph)	0	0	0	221	85	506	163	655	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	41	41	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	513	217	0	818	0	0	0	0
Turn Type				Split	NA	Perm	Split	NA				
Protected Phases				8	8		2	2				
Permitted Phases						8						
Actuated Green, G (s)					22.0	22.0		15.0				
Effective Green, g (s)					22.0	22.0		15.0				
Actuated g/C Ratio					0.49	0.49		0.33				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1364	634		1051				
v/s Ratio Prot					c0.18			c0.26				
v/s Ratio Perm						0.17						
v/c Ratio					0.38	0.34		0.78				
Uniform Delay, d1					7.2	7.1		13.5				
Progression Factor					1.00	1.00		0.90				
Incremental Delay, d2					0.8	1.5		1.9				
Delay (s)					8.0	8.5		14.0				
Level of Service					A	A		B				
Approach Delay (s)		0.0			8.2			14.0			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			11.1		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			45.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			55.3%		ICU Level of Service					B		
Analysis Period (min)			15									
c Critical Lane Group												


















HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	1035	0	0	0	0	0	1049	198	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.98				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5729						4468				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5729						4468				
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
Adj. Flow (vph)	161	1035	0	0	0	0	0	1049	198	0	0	0
RTOR Reduction (vph)	0	17	0	0	0	0	0	30	0	0	0	0
Lane Group Flow (vph)	0	1179	0	0	0	0	0	1217	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		27.0						24.0				
Effective Green, g (s)		27.0						24.0				
Actuated g/C Ratio		0.45						0.40				
Clearance Time (s)		4.5						4.5				
Lane Grp Cap (vph)		2578						1787				
v/s Ratio Prot								c0.27				
v/s Ratio Perm		0.21										
v/c Ratio		0.46						0.68				
Uniform Delay, d1		11.4						14.8				
Progression Factor		0.81						1.00				
Incremental Delay, d2		0.5						2.1				
Delay (s)		9.7						17.0				
Level of Service		A						B				
Approach Delay (s)		9.7			0.0			17.0			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.4					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)			9.0	
Intersection Capacity Utilization			74.5%					ICU Level of Service			D	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	74	879	57	56	744	623	39	19	27	750	40	97
Peak Hour 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
Hourly flow rate (vph)	74	879	57	56	744	623	39	19	27	750	40	97
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	1010	800	623	85	887							
Volume Left (vph)	74	56	0	39	750							
Volume Right (vph)	57	0	623	27	97							
Hadj (s)	0.01	0.07	-0.67	-0.06	0.14							
Departure Headway (s)	7.7	8.1	7.4	9.5	7.7							
Degree Utilization, x	2.15	1.80	1.28	0.22	1.90							
Capacity (veh/h)	477	449	496	374	476							
Control Delay (s)	544.0	389.2	162.2	15.2	430.2							
Approach Delay (s)	544.0	289.8		15.2	430.2							
Approach LOS	F	F		C	F							
Intersection Summary												
Delay			394.9									
Level of Service			F									
Intersection Capacity Utilization			162.3%	ICU Level of Service	H							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

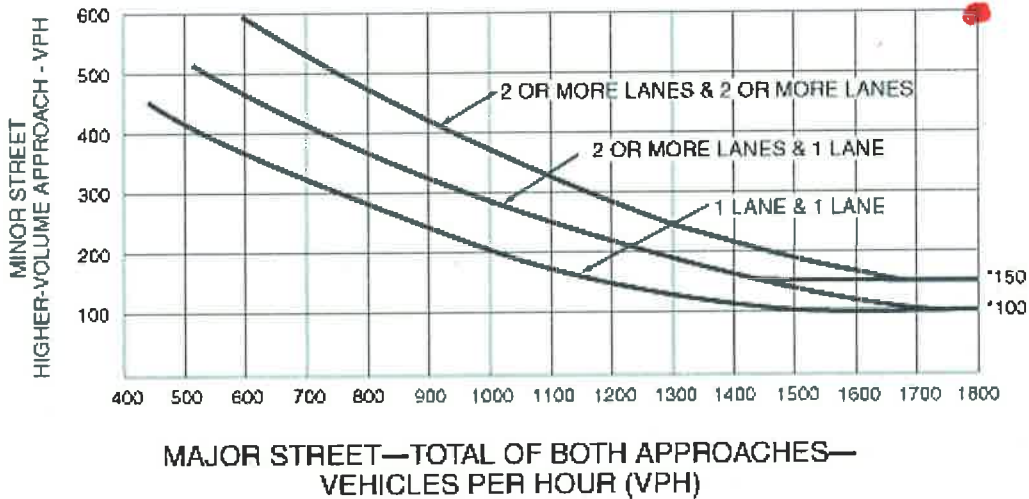
Intersection #30
5th Avenue / Embarcadero
Cumulative plus Residential
PM Peak Hour

PART B

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour






























2433/887

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.





























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	
Volume (vph)	242	216	59	166	581	113	33	532	49	89	808	166
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
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3453		1770	3495		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3453		1770	3495		1770	3539	1583
Peak-hour factor, 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)	263	235	64	180	632	123	36	578	53	97	878	180
RTOR Reduction (vph)	0	0	48	0	15	0	0	6	0	0	0	155
Lane Group Flow (vph)	263	235	16	180	740	0	36	625	0	97	878	25
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									
Actuated Green, G (s)	11.7	20.4	20.4	13.7	22.4		4.6	25.4		7.9	28.7	11.7
Effective Green, g (s)	11.7	20.4	20.4	13.7	22.4		4.6	25.4		7.9	28.7	11.7
Actuated g/C Ratio	0.14	0.24	0.24	0.16	0.27		0.06	0.30		0.09	0.34	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	481	865	387	290	927		97	1064		167	1217	222
v/s Ratio Prot	0.08	0.07		c0.10	c0.21		0.02	0.18		c0.05	c0.25	0.02
v/s Ratio Perm			0.01									
v/c Ratio	0.55	0.27	0.04	0.62	0.80		0.37	0.59		0.58	0.72	0.11
Uniform Delay, d1	33.4	25.5	24.0	32.4	28.4		38.0	24.6		36.2	23.9	31.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	0.0	4.1	4.8		2.4	2.4		5.1	3.7	0.2
Delay (s)	34.7	25.7	24.1	36.5	33.2		40.4	26.9		41.2	27.6	31.5
Level of Service	C	C	C	D	C		D	C		D	C	C
Approach Delay (s)		29.7			33.9			27.7			29.3	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			30.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			83.4			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			65.6%			ICU Level of Service				C		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue


















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 		 	 		 	 		
Volume (vph)	321	448	315	89	240	170	87	572	39	130	1142	119	
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	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00	
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3320		1770	3319		3433	3539	1583	3433	3539	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	3320		1770	3319		3433	3539	1583	3433	3539	1583	
Peak-hour factor, 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)	349	487	342	97	261	185	95	622	42	141	1241	129	
RTOR Reduction (vph)	0	115	0	0	141	0	0	0	30	0	0	69	
Lane Group Flow (vph)	349	714	0	97	305	0	95	622	12	141	1241	60	
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases									2			6	
Actuated Green, G (s)	20.5	26.3		8.5	14.3		6.3	25.2	25.2	8.9	27.8	27.8	
Effective Green, g (s)	20.5	26.3		8.5	14.3		6.3	25.2	25.2	8.9	27.8	27.8	
Actuated g/C Ratio	0.24	0.31		0.10	0.17		0.07	0.30	0.30	0.10	0.33	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	427	1028		177	559		254	1050	469	359	1158	518	
v/s Ratio Prot	c0.20	c0.21		0.05	0.09		0.03	0.18		c0.04	c0.35		
v/s Ratio Perm									0.01			0.04	
v/c Ratio	0.82	0.69		0.55	0.55		0.37	0.59	0.03	0.39	1.07	0.12	
Uniform Delay, d1	30.4	25.8		36.4	32.3		37.4	25.5	21.2	35.5	28.6	20.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.5	2.1		3.4	1.1		0.9	2.5	0.1	0.7	47.9	0.5	
Delay (s)	41.9	27.8		39.8	33.4		38.4	27.9	21.3	36.2	76.5	20.4	
Level of Service	D	C		D	C		D	C	C	D	E	C	
Approach Delay (s)		32.0			34.6			28.9			67.9		
Approach LOS		C			C			C			E		
Intersection Summary													
HCM 2000 Control Delay			45.3									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.89										
Actuated Cycle Length (s)			84.9									Sum of lost time (s)	16.0
Intersection Capacity Utilization			78.1%									ICU Level of Service	D
Analysis Period (min)			15										
c	Critical Lane Group												

Level Of Service Computation Report

Cumulative plus Project (Maximum Commercial Scenario) Conditions
AM Peak Hour

























HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	74	27	20	268	49	49	22	5	32	92	96
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	24	74	27	20	268	49	49	22	5	32	92	96
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	317			101			452	492	50	434	482	158
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	317			101			452	492	50	434	482	158
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			86	95	100	93	80	89
cM capacity (veh/h)	1240			1489			361	460	1007	473	467	859
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	61	64	154	183	76	32	61	127				
Volume Left	24	0	20	0	49	32	0	0				
Volume Right	0	27	0	49	5	0	0	96				
cSH	1240	1700	1489	1700	404	473	467	714				
Volume to Capacity	0.02	0.04	0.01	0.11	0.19	0.07	0.13	0.18				
Queue Length 95th (ft)	1	0	1	0	17	5	11	16				
Control Delay (s)	3.2	0.0	1.1	0.0	16.0	13.2	13.9	11.1				
Lane LOS	A		A		C	B	B	B				
Approach Delay (s)	1.6		0.5		16.0	12.2						
Approach LOS					C	B						
Intersection Summary												
Average Delay			5.6									
Intersection Capacity Utilization			36.3%		ICU Level of Service				A			
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  						  		  	  		
Volume (vph)	4	213	17	0	0	0	0	86	22	63	231	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						4.5		4.5	4.5		
Lane Util. Factor		0.91						0.95		1.00	0.91		
Frt		0.99						0.97		1.00	1.00		
Flt Protected		1.00						1.00		0.95	1.00		
Satd. Flow (prot)		5026						3431		1770	5085		
Flt Permitted		1.00						1.00		0.68	1.00		
Satd. Flow (perm)		5026						3431		1274	5085		
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	
Adj. Flow (vph)	4	213	17	0	0	0	0	86	22	63	231	0	
RTOR Reduction (vph)	0	7	0	0	0	0	0	16	0	0	0	0	
Lane Group Flow (vph)	0	227	0	0	0	0	0	92	0	63	231	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		45.5						19.5		19.5	19.5		
Effective Green, g (s)		45.5						19.5		19.5	19.5		
Actuated g/C Ratio		0.61						0.26		0.26	0.26		
Clearance Time (s)		5.5						4.5		4.5	4.5		
Vehicle Extension (s)		3.0						3.0		3.0	3.0		
Lane Grp Cap (vph)		3049						892		331	1322		
v/s Ratio Prot								0.03			0.05		
v/s Ratio Perm		0.05								c0.05			
v/c Ratio		0.07						0.10		0.19	0.17		
Uniform Delay, d1		6.1						21.1		21.6	21.5		
Progression Factor		1.00						1.24		0.63	0.65		
Incremental Delay, d2		0.0						0.2		1.3	0.3		
Delay (s)		6.1						26.3		14.8	14.2		
Level of Service		A						C		B	B		
Approach Delay (s)		6.1			0.0			26.3			14.3		
Approach LOS		A			A			C			B		
Intersection Summary													
HCM 2000 Control Delay			13.3									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.11										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			29.8%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	0	0	0	99	259	248	11	26	78	0	0	188	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95	
Frt					1.00	0.85		1.00	1.00			1.00	
Flt Protected					0.99	1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3491	1583		1770	1863			3539	
Flt Permitted					0.99	1.00		0.63	1.00			1.00	
Satd. Flow (perm)					3491	1583		1180	1863			3539	
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	
Adj. Flow (vph)	0	0	0	99	259	248	11	26	78	0	0	188	
RTOR Reduction (vph)	0	0	0	0	0	200	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	358	48	0	37	78	0	0	188	
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA	
Protected Phases					8				2			6	
Permitted Phases				8		8	2	2					
Actuated Green, G (s)					14.5	14.5		51.5	51.5			51.5	
Effective Green, g (s)					14.5	14.5		51.5	51.5			51.5	
Actuated g/C Ratio					0.19	0.19		0.69	0.69			0.69	
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5	
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					674	306		810	1279			2430	
v/s Ratio Prot									0.04			c0.05	
v/s Ratio Perm					0.10	0.03		0.03					
v/c Ratio					0.53	0.16		0.05	0.06			0.08	
Uniform Delay, d1					27.2	25.2		3.8	3.8			3.9	
Progression Factor					0.85	0.58		0.57	0.57			0.82	
Incremental Delay, d2					0.8	0.2		0.1	0.1			0.1	
Delay (s)					23.9	14.9		2.3	2.3			3.2	
Level of Service					C	B		A	A			A	
Approach Delay (s)		0.0			20.2				2.3			3.2	
Approach LOS		A			C				A			A	
Intersection Summary													
HCM 2000 Control Delay			13.7		HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.18										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)				9.0				
Intersection Capacity Utilization			29.8%		ICU Level of Service				A				
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis






















3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	62
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	62
RTOR Reduction (vph)	19
Lane Group Flow (vph)	43
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	51.5
Effective Green, g (s)	51.5
Actuated g/C Ratio	0.69
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1086
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.04
Uniform Delay, d1	3.8
Progression Factor	0.81
Incremental Delay, d2	0.1
Delay (s)	3.1
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

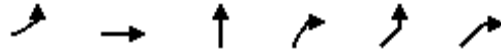
HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	339	44	55	749	46	158	172	16	50	102	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	4998		1770	5041		1770	1839		1770	3539	1583
Flt Permitted	0.24	1.00		0.52	1.00		0.69	1.00		0.64	1.00	1.00
Satd. Flow (perm)	451	4998		962	5041		1281	1839		1191	3539	1583
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
Adj. Flow (vph)	53	339	44	55	749	46	158	172	16	50	102	94
RTOR Reduction (vph)	0	30	0	0	13	0	0	3	0	0	0	37
Lane Group Flow (vph)	53	353	0	55	782	0	158	185	0	50	102	57
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	19.8	19.8		19.8	19.8		45.7	45.7		45.7	45.7	45.7
Effective Green, g (s)	19.8	19.8		19.8	19.8		45.7	45.7		45.7	45.7	45.7
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.61	0.61		0.61	0.61	0.61
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	119	1319		253	1330		780	1120		725	2156	964
v/s Ratio Prot		0.07			c0.16			0.10				0.03
v/s Ratio Perm	0.12			0.06			c0.12			0.04		0.04
v/c Ratio	0.45	0.27		0.22	0.59		0.20	0.17		0.07	0.05	0.06
Uniform Delay, d1	23.0	21.9		21.6	24.0		6.5	6.4		6.0	5.9	5.9
Progression Factor	1.00	1.00		1.00	1.00		0.71	0.69		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1		0.4	0.7		0.6	0.3		0.2	0.0	0.1
Delay (s)	25.7	22.0		22.0	24.7		5.2	4.7		6.2	5.9	6.1
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		22.4			24.5			4.9			6.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			18.0				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			75.0			Sum of lost time (s)			9.5			
Intersection Capacity Utilization			48.0%			ICU Level of Service			A			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street



















Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations	↶	↶↷↷↷	↶↷↷		↶↷↷	
Volume (vph)	159	883	477	31	92	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	0.99		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5427	4535		2959	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5427	4535		2959	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	159	883	477	31	92	69
RTOR Reduction (vph)	75	34	6	0	0	0
Lane Group Flow (vph)	68	865	502	0	161	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	55.0	55.0	24.0		21.0	
Effective Green, g (s)	55.0	55.0	24.0		21.0	
Actuated g/C Ratio	0.48	0.48	0.21		0.18	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	616	2595	946		540	
v/s Ratio Prot	0.05	c0.16	c0.11		c0.05	
v/s Ratio Perm						
v/c Ratio	0.11	0.33	0.53		0.30	
Uniform Delay, d1	16.5	18.6	40.5		40.6	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.3	2.1		0.3	
Delay (s)	16.9	19.0	42.6		40.9	
Level of Service	B	B	D		D	
Approach Delay (s)		18.7	42.6		40.9	
Approach LOS		B	D		D	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			


















HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	239	289	43	565	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5	4.5	5.0	5.0				
Lane Util. Factor					0.91	0.91	0.81	0.81				
Frt					0.95	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					2895	1297	1290	5430				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					2895	1297	1290	5430				
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
Adj. Flow (vph)	0	0	0	0	239	289	43	565	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	52	62	25	9	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	311	103	14	560	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					64.0	64.0	41.5	41.5				
Effective Green, g (s)					64.0	64.0	41.5	41.5				
Actuated g/C Ratio					0.56	0.56	0.36	0.36				
Clearance Time (s)					4.5	4.5	5.0	5.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					1611	721	465	1959				
v/s Ratio Prot					c0.11							
v/s Ratio Perm						0.08	0.01	0.10				
v/c Ratio					0.19	0.14	0.03	0.29				
Uniform Delay, d1					12.7	12.3	23.7	26.2				
Progression Factor					1.00	1.00	1.95	1.18				
Incremental Delay, d2					0.3	0.4	0.1	0.3				
Delay (s)					12.9	12.7	46.3	31.3				
Level of Service					B	B	D	C				
Approach Delay (s)		0.0			12.9			32.3			0.0	
Approach LOS		A			B			C			A	
Intersection Summary												
HCM 2000 Control Delay			23.2		HCM 2000 Level of Service				C			
HCM 2000 Volume to Capacity ratio			0.23									
Actuated Cycle Length (s)			115.0		Sum of lost time (s)				9.5			
Intersection Capacity Utilization			46.3%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	94	79	8	109	101	10	39	0	335	180	66
Peak Hour 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
Hourly flow rate (vph)	7	94	79	8	109	101	10	39	0	335	180	66
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	180	218	49	425	156							
Volume Left (vph)	7	8	10	335	0							
Volume Right (vph)	79	101	0	0	66							
Hadj (s)	-0.22	-0.24	0.07	0.43	-0.26							
Departure Headway (s)	5.7	5.6	6.2	6.2	5.5							
Degree Utilization, x	0.29	0.34	0.08	0.73	0.24							
Capacity (veh/h)	583	595	510	571	640							
Control Delay (s)	11.0	11.5	9.7	22.7	9.0							
Approach Delay (s)	11.0	11.5	9.7	19.0								
Approach LOS	B	B	A	C								
Intersection Summary												
Delay			15.6									
Level of Service			C									
Intersection Capacity Utilization			47.1%	ICU Level of Service	A							
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	2	2	7	22	26	16	378	33	103	463	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	6	2	2	7	22	26	16	378	33	103	463	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											288	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	951	1136	256	867	1144	206	511			411		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	896	1086	182	810	1094	206	444			411		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	100	97	88	97	99			91		
cM capacity (veh/h)	186	188	808	241	186	801	1083			1144		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	10	55	205	222	334	280						
Volume Left	6	7	16	0	103	0						
Volume Right	2	26	0	33	0	48						
cSH	220	306	1083	1700	1144	1700						
Volume to Capacity	0.05	0.18	0.01	0.13	0.09	0.16						
Queue Length 95th (ft)	4	16	1	0	7	0						
Control Delay (s)	22.1	19.3	0.8	0.0	3.2	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	22.1	19.3	0.4		1.8							
Approach LOS	C	C										
Intersection Summary												
Average Delay			2.3									
Intersection Capacity Utilization			42.6%	ICU Level of Service	A							
Analysis Period (min)			15									
























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	38	21	5	54	49	42	359	30	102	427	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.95			0.94			0.99			0.96	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	1763			1745			3485			3386	
Flt Permitted	0.75	1.00			0.99			0.85			0.82	
Satd. Flow (perm)	1391	1763			1736			2980			2782	
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
Adj. Flow (vph)	34	38	21	5	54	49	42	359	30	102	427	168
RTOR Reduction (vph)	0	12	0	0	28	0	0	7	0	0	40	0
Lane Group Flow (vph)	34	47	0	0	80	0	0	424	0	0	657	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	593	752			740			1350			1261	
v/s Ratio Prot		0.03										
v/s Ratio Perm	0.02				c0.05			0.14			c0.24	
v/c Ratio	0.06	0.06			0.11			0.31			0.52	
Uniform Delay, d1	12.6	12.7			12.9			13.1			14.7	
Progression Factor	1.00	1.00			1.00			1.00			1.09	
Incremental Delay, d2	0.2	0.2			0.3			0.6			1.5	
Delay (s)	12.8	12.8			13.2			13.7			17.5	
Level of Service	B	B			B			B			B	
Approach Delay (s)		12.8			13.2			13.7			17.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.6					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			53.3%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 			
Volume (vph)	931	179	99	0	0	0	0	318	537	548	415	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00		
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1610	3272	1583					3539	1583	3433	1863		
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1610	3272	1583					3539	1583	3433	1863		
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	
Adj. Flow (vph)	931	179	99	0	0	0	0	318	537	548	415	0	
RTOR Reduction (vph)	0	0	70	0	0	0	0	0	177	0	0	0	
Lane Group Flow (vph)	465	645	29	0	0	0	0	318	360	548	415	0	
Turn Type	Split	NA	Prot					NA	Prot	Prot	NA		
Protected Phases	4	4	4					2	2	1	6		
Permitted Phases													
Actuated Green, G (s)	21.6	21.6	21.6					23.5	23.5	16.4	43.4		
Effective Green, g (s)	21.6	21.6	21.6					23.5	23.5	16.4	43.4		
Actuated g/C Ratio	0.29	0.29	0.29					0.31	0.31	0.22	0.58		
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	463	942	455					1108	496	750	1078		
v/s Ratio Prot	c0.29	0.20	0.02					0.09	c0.23	c0.16	0.22		
v/s Ratio Perm													
v/c Ratio	1.00	0.96dl	0.06					0.29	0.73	0.73	0.38		
Uniform Delay, d1	26.7	23.7	19.4					19.4	22.9	27.2	8.6		
Progression Factor	0.99	0.99	0.99					0.85	0.67	0.81	0.46		
Incremental Delay, d2	42.9	2.1	0.1					0.6	8.9	3.5	0.2		
Delay (s)	69.3	25.4	19.2					17.1	24.3	25.5	4.2		
Level of Service	E	C	B					B	C	C	A		
Approach Delay (s)		41.8			0.0			21.7			16.3		
Approach LOS		D			A			C			B		
Intersection Summary													
HCM 2000 Control Delay			28.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.82										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			110.9%									ICU Level of Service	H
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													


















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	359	160	533	67	473	0	0	384	46
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	
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.98	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1593	3185	1425	1593	3185			4503	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1593	3185	1425	1593	3185			4503	
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
Adj. Flow (vph)	0	0	0	359	160	533	67	473	0	0	384	46
RTOR Reduction (vph)	0	0	0	0	0	221	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	359	160	312	67	473	0	0	412	0
Turn Type				Split	NA	Prot	Prot	NA			NA	
Protected Phases				8	8	8	5	2			6	
Permitted Phases												
Actuated Green, G (s)				27.0	27.0	27.0	15.2	40.0			20.8	
Effective Green, g (s)				27.0	27.0	27.0	15.2	40.0			20.8	
Actuated g/C Ratio				0.36	0.36	0.36	0.20	0.53			0.28	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				573	1146	513	322	1698			1248	
v/s Ratio Prot				c0.23	0.05	0.22	0.04	c0.15			c0.09	
v/s Ratio Perm												
v/c Ratio				0.63	0.14	0.61	0.21	0.28			0.33	
Uniform Delay, d1				19.8	16.2	19.7	24.9	9.6			21.6	
Progression Factor				1.00	1.00	1.00	1.87	2.41			1.00	
Incremental Delay, d2				2.1	0.1	2.0	0.2	0.3			0.7	
Delay (s)				22.0	16.2	21.7	46.9	23.4			22.3	
Level of Service				C	B	C	D	C			C	
Approach Delay (s)		0.0			21.0			26.3			22.3	
Approach LOS		A			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			22.7	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			75.0	Sum of lost time (s)				12.0				
Intersection Capacity Utilization			110.9%	ICU Level of Service				H				
Analysis Period (min)			15									
c	Critical Lane Group											


















HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	632	133	0	0	0	0	418	80	105	552	0
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	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.98		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4550	1425					3109		1593	3185	
Flt Permitted		0.99	1.00					1.00		0.42	1.00	
Satd. Flow (perm)		4550	1425					3109		704	3185	
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
Adj. Flow (vph)	84	632	133	0	0	0	0	418	80	105	552	0
RTOR Reduction (vph)	0	0	82	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	716	51	0	0	0	0	472	0	105	552	0
Turn Type	Split	NA	Perm					NA		pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			4							6		
Actuated Green, G (s)		23.0	23.0					21.0		29.0	29.0	
Effective Green, g (s)		23.0	23.0					21.0		29.0	29.0	
Actuated g/C Ratio		0.38	0.38					0.35		0.48	0.48	
Clearance Time (s)		4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		1744	546					1088		399	1539	
v/s Ratio Prot		c0.16						c0.15		0.02	c0.17	
v/s Ratio Perm			0.04							0.11		
v/c Ratio		0.41	0.09					0.43		0.26	0.36	
Uniform Delay, d1		13.5	11.8					14.9		10.9	9.7	
Progression Factor		1.00	1.00					1.00		0.30	0.30	
Incremental Delay, d2		0.2	0.1					1.3		0.3	0.6	
Delay (s)		13.7	11.9					16.2		3.6	3.5	
Level of Service		B	B					B		A	A	
Approach Delay (s)		13.4			0.0			16.2			3.5	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			10.9					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		12.0		
Intersection Capacity Utilization			54.1%					ICU Level of Service		A		
Analysis Period (min)			15									
c	Critical Lane Group											





















HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	153	500	106	95	372	0	0	486	42
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	
Lane Util. Factor					0.95		1.00	0.95			0.91	
Flt					0.98		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3087		1593	3185			4522	
Flt Permitted					0.99		0.42	1.00			1.00	
Satd. Flow (perm)					3087		712	3185			4522	
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
Adj. Flow (vph)	0	0	0	153	500	106	95	372	0	0	486	42
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	0	0	0	737	0	95	372	0	0	511	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					26.0		26.0	26.0			18.0	
Effective Green, g (s)					26.0		26.0	26.0			18.0	
Actuated g/C Ratio					0.43		0.43	0.43			0.30	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)					1337		367	1380			1356	
v/s Ratio Prot					c0.24		0.02	c0.12			c0.11	
v/s Ratio Perm							0.09					
v/c Ratio					0.55		0.26	0.27			0.38	
Uniform Delay, d1					12.7		11.7	10.9			16.6	
Progression Factor					1.00		0.58	0.52			1.89	
Incremental Delay, d2					1.6		1.6	0.4			0.7	
Delay (s)					14.3		8.4	6.1			32.0	
Level of Service					B		A	A			C	
Approach Delay (s)		0.0			14.3			6.6			32.0	
Approach LOS		A			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			17.6		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			60.0		Sum of lost time (s)						12.0	
Intersection Capacity Utilization			54.1%		ICU Level of Service						A	
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	3	278	87	1	327	111	0	365	26	0	650	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			0.95			0.95	
Frt		0.96			0.96			0.99			0.98	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3071			3064			3154			3124	
Flt Permitted		0.95			0.95			1.00			1.00	
Satd. Flow (perm)		2924			2924			3154			3124	
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
Adj. Flow (vph)	3	278	87	1	327	111	0	365	26	0	650	95
RTOR Reduction (vph)	0	49	0	0	55	0	0	9	0	0	19	0
Lane Group Flow (vph)	0	319	0	0	384	0	0	382	0	0	726	0
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.5			21.5			27.5			27.5	
Effective Green, g (s)		21.5			21.5			27.5			27.5	
Actuated g/C Ratio		0.36			0.36			0.46			0.46	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Lane Grp Cap (vph)		1047			1047			1445			1431	
v/s Ratio Prot								0.12			c0.23	
v/s Ratio Perm		0.11			c0.13							
v/c Ratio		0.30			0.37			0.26			0.51	
Uniform Delay, d1		13.9			14.2			10.0			11.5	
Progression Factor		1.00			1.00			0.39			1.00	
Incremental Delay, d2		0.8			1.0			0.4			1.3	
Delay (s)		14.6			15.2			4.4			12.8	
Level of Service		B			B			A			B	
Approach Delay (s)		14.6			15.2			4.4			12.8	
Approach LOS		B			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			12.0								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			47.3%								ICU Level of Service	A
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	26	15	5	21	0	0	0	0	14	19	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	26	15	5	21	0	0	0	0	14	19	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	21			41			86	64	34	64	72	21
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	21			41			86	64	34	64	72	21
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	98	99
cM capacity (veh/h)	1595			1568			872	824	1040	927	816	1056
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	41	26	24	22								
Volume Left	0	5	14	0								
Volume Right	15	0	0	12								
cSH	1700	1568	879	935								
Volume to Capacity	0.02	0.00	0.03	0.02								
Queue Length 95th (ft)	0	0	2	2								
Control Delay (s)	0.0	1.4	9.2	8.9								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.4	9.1									
Approach LOS			A									
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			15.4%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	27	13	20	30	0	0	0	0	7	3	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	27	13	20	30	0	0	0	0	7	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked												
vC, conflicting volume	30			40			107	104	34	104	110	30
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			40			107	104	34	104	110	30
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	100	100
cM capacity (veh/h)	1583			1570			859	777	1040	868	770	1044
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	40	50	8	4								
Volume Left	0	20	7	0								
Volume Right	13	0	0	2								
cSH	1700	1570	849	906								
Volume to Capacity	0.02	0.01	0.01	0.00								
Queue Length 95th (ft)	0	1	1	0								
Control Delay (s)	0.0	3.0	9.3	9.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	3.0	9.2									
Approach LOS			A									
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			19.4%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
















17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	64	184	157	52	77	101
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	64	184	157	52	77	101
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		268	128	312	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		268	128	312	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	96		71	93	87	91
cM capacity (veh/h)	1623		542	732	579	1085
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total	64	184	209	77	101	
Volume Left	64	0	157	0	0	
Volume Right	0	184	0	0	101	
cSH	1623	1700	579	579	1085	
Volume to Capacity	0.04	0.11	0.36	0.13	0.09	
Queue Length 95th (ft)	3	0	41	11	8	
Control Delay (s)	7.3	0.0	14.7	12.2	8.7	
Lane LOS	A		B	B	A	
Approach Delay (s)	1.9		14.7	10.2		
Approach LOS			B	B		
Intersection Summary						
Average Delay			8.4			
Intersection Capacity Utilization			28.3%	ICU Level of Service	A	
Analysis Period (min)			15			





















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	691	0	0	0	0	0	616	1386	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0	5.0			
Lane Util. Factor		0.91						0.91	0.88			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4533						4577	2508			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4533						4577	2508			
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
Adj. Flow (vph)	165	691	0	0	0	0	0	616	1386	0	0	0
RTOR Reduction (vph)	0	67	0	0	0	0	0	0	131	0	0	0
Lane Group Flow (vph)	0	789	0	0	0	0	0	616	1255	0	0	0
Turn Type	Perm	NA						NA	custom			
Protected Phases		2						1				
Permitted Phases	2								5			
Actuated Green, G (s)		27.0						23.0	29.0			
Effective Green, g (s)		27.0						23.0	29.0			
Actuated g/C Ratio		0.45						0.38	0.48			
Clearance Time (s)		5.0						5.0	5.0			
Vehicle Extension (s)		3.0						3.0	3.0			
Lane Grp Cap (vph)		2039						1754	1212			
v/s Ratio Prot								0.13				
v/s Ratio Perm		0.17							c0.50			
v/c Ratio		0.39						0.35	1.04			
Uniform Delay, d1		11.0						13.2	15.5			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		0.6						0.6	35.4			
Delay (s)		11.5						13.7	50.9			
Level of Service		B						B	D			
Approach Delay (s)		11.5			0.0			39.5			0.0	
Approach LOS		B			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			31.1					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			100.4%					ICU Level of Service		G		
Analysis Period (min)			15									
c	Critical Lane Group											




















HCM Signalized Intersection Capacity Analysis

19: Jackson Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  						 		 			
Volume (vph)	311	438	514	0	0	0	0	236	41	66	99	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.5		5.5	5.5		
Lane Util. Factor		0.91						1.00		1.00	1.00		
Frt		0.94						0.98		1.00	1.00		
Flt Protected		0.99						1.00		0.95	1.00		
Satd. Flow (prot)		4717						1826		1770	1863		
Flt Permitted		0.99						1.00		0.53	1.00		
Satd. Flow (perm)		4717						1826		994	1863		
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	
Adj. Flow (vph)	311	438	514	0	0	0	0	236	41	66	99	0	
RTOR Reduction (vph)	0	166	0	0	0	0	0	8	0	0	0	0	
Lane Group Flow (vph)	0	1097	0	0	0	0	0	269	0	66	99	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		34.5						29.5		29.5	29.5		
Effective Green, g (s)		34.5						29.5		29.5	29.5		
Actuated g/C Ratio		0.46						0.39		0.39	0.39		
Clearance Time (s)		5.5						5.5		5.5	5.5		
Lane Grp Cap (vph)		2169						718		390	732		
v/s Ratio Prot								c0.15			0.05		
v/s Ratio Perm		0.23								0.07			
v/c Ratio		0.51						0.37		0.17	0.14		
Uniform Delay, d1		14.3						16.2		14.8	14.6		
Progression Factor		1.00						1.00		0.67	0.69		
Incremental Delay, d2		0.8						1.5		0.9	0.4		
Delay (s)		15.1						17.7		10.9	10.4		
Level of Service		B						B		B	B		
Approach Delay (s)		15.1			0.0			17.7			10.6		
Approach LOS		B			A			B			B		
Intersection Summary													
HCM 2000 Control Delay			15.1									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.44										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			79.3%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	2	311	56	298	281	0	0	206	1408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			5.5	4.0
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425
Flt Permitted				0.95	1.00	1.00	0.63	1.00			1.00	1.00
Satd. Flow (perm)				1593	1676	1425	1054	1676			1676	1425
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
Adj. Flow (vph)	0	0	0	2	311	56	298	281	0	0	206	1408
RTOR Reduction (vph)	0	0	0	0	0	41	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	2	311	15	298	281	0	0	206	1408
Turn Type				Split	NA	Perm	Perm	NA			NA	Free
Protected Phases				8	8			2			6	
Permitted Phases						8	2					Free
Actuated Green, G (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0
Effective Green, g (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0
Actuated g/C Ratio				0.26	0.26	0.26	0.59	0.59			0.59	1.00
Clearance Time (s)				5.5	5.5	5.5	5.5	5.5			5.5	
Lane Grp Cap (vph)				414	435	370	625	994			994	1425
v/s Ratio Prot				0.00	0.19			0.17			0.12	
v/s Ratio Perm						0.01	0.28					c0.99
v/c Ratio				0.00	0.71	0.04	0.48	0.28			0.21	0.99
Uniform Delay, d1				20.6	25.2	20.7	8.6	7.5			7.1	0.0
Progression Factor				1.00	1.00	1.00	1.23	1.21			1.00	1.00
Incremental Delay, d2				0.0	9.7	0.2	2.4	0.6			0.5	21.2
Delay (s)				20.6	34.9	20.9	13.0	9.7			7.5	21.2
Level of Service				C	C	C	B	A			A	C
Approach Delay (s)		0.0			32.7			11.4			19.4	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			19.5		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			1.16									
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					11.0		
Intersection Capacity Utilization			79.3%		ICU Level of Service					D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	529	1338	0	0	0	0	354	90	28	356	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.92	0.85					0.97			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		3968	1226					1631			1670	
Flt Permitted		1.00	1.00					1.00			0.96	
Satd. Flow (perm)		3968	1226					1631			1605	
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
Adj. Flow (vph)	38	529	1338	0	0	0	0	354	90	28	356	0
RTOR Reduction (vph)	0	316	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	920	669	0	0	0	0	429	0	0	384	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		19.0	60.0					32.0			32.0	
Effective Green, g (s)		19.0	60.0					32.0			32.0	
Actuated g/C Ratio		0.32	1.00					0.53			0.53	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1256	1226					869			856	
v/s Ratio Prot		c0.23						0.26				
v/s Ratio Perm			c0.55								0.24	
v/c Ratio		0.90dr	0.55					0.49			0.45	
Uniform Delay, d1		18.2	0.0					8.9			8.6	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		3.8	1.7					2.0			1.7	
Delay (s)		22.0	1.7					10.9			10.3	
Level of Service		C	A					B			B	
Approach Delay (s)		14.9			0.0			10.9			10.3	
Approach LOS		B			A			B			B	

Intersection Summary






















HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  								  	  		
Volume (vph)	0	547	22	0	0	0	0	0	0	589	149	0	
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		
Lane Util. Factor		0.91								0.91	0.91		
Frt		0.99								1.00	1.00		
Flt Protected		1.00								0.95	0.97		
Satd. Flow (prot)		5056								1610	3281		
Flt Permitted		1.00								0.95	0.97		
Satd. Flow (perm)		5056								1610	3281		
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	
Adj. Flow (vph)	0	547	22	0	0	0	0	0	0	589	149	0	
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	71	71	0	
Lane Group Flow (vph)	0	560	0	0	0	0	0	0	0	223	373	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		16.0								22.0	22.0		
Effective Green, g (s)		16.0								22.0	22.0		
Actuated g/C Ratio		0.35								0.48	0.48		
Clearance Time (s)		4.0								4.0	4.0		
Lane Grp Cap (vph)		1758								770	1569		
v/s Ratio Prot		c0.11											
v/s Ratio Perm										c0.14	0.11		
v/c Ratio		0.32								0.29	0.24		
Uniform Delay, d1		11.0								7.3	7.1		
Progression Factor		1.00								1.00	1.00		
Incremental Delay, d2		0.5								0.9	0.4		
Delay (s)		11.5								8.2	7.4		
Level of Service		B								A	A		
Approach Delay (s)		11.5			0.0			0.0			7.7		
Approach LOS		B			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			9.4									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.30										
Actuated Cycle Length (s)			46.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			33.5%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

23: Madison Street & 6th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	
Volume (vph)	0	0	0	34	180	0	0	0	0	0	753	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frt					1.00						0.96	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					4541						4409	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					4541						4409	
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
Adj. Flow (vph)	0	0	0	34	180	0	0	0	0	0	753	244
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	125	0
Lane Group Flow (vph)	0	0	0	0	191	0	0	0	0	0	872	0
Turn Type				Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases												
Actuated Green, G (s)					15.0						22.0	
Effective Green, g (s)					15.0						22.0	
Actuated g/C Ratio					0.33						0.49	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1513						2155	
v/s Ratio Prot					c0.04						c0.20	
v/s Ratio Perm												
v/c Ratio					0.13						0.40	
Uniform Delay, d1					10.4						7.3	
Progression Factor					0.99						1.00	
Incremental Delay, d2					0.1						0.6	
Delay (s)					10.4						7.9	
Level of Service					B						A	
Approach Delay (s)		0.0			10.4			0.0			7.9	
Approach LOS		A			B			A			A	















Intersection Summary

HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		




















c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	435	254	0	0	0	0	0	0	142	722	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0									4.0		
Lane Util. Factor		0.86									0.91		
Frt		0.94									1.00		
Flt Protected		1.00									0.99		
Satd. Flow (prot)		5448									4539		
Flt Permitted		1.00									0.99		
Satd. Flow (perm)		5448									4539		
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	
Adj. Flow (vph)	0	435	254	0	0	0	0	0	0	142	722	0	
RTOR Reduction (vph)	0	94	0	0	0	0	0	0	0	0	49	0	
Lane Group Flow (vph)	0	595	0	0	0	0	0	0	0	0	815	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		23.0									29.0		
Effective Green, g (s)		23.0									29.0		
Actuated g/C Ratio		0.38									0.48		
Clearance Time (s)		4.0									4.0		
Vehicle Extension (s)		3.0									3.0		
Lane Grp Cap (vph)		2088									2193		
v/s Ratio Prot		c0.11											
v/s Ratio Perm											0.18		
v/c Ratio		0.28									0.37		
Uniform Delay, d1		12.8									9.8		
Progression Factor		0.52									1.00		
Incremental Delay, d2		0.2									0.5		
Delay (s)		6.9									10.2		
Level of Service		A									B		
Approach Delay (s)		6.9			0.0			0.0			10.2		
Approach LOS		A			A			A			B		
Intersection Summary													
HCM 2000 Control Delay			8.8									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.33										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			40.4%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Volume (veh/h)	139	0	75	2	0	0	396	579	0	0	325	201
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	139	0	75	2	0	0	396	579	0	0	325	201
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											563	
pX, platoon unblocked												
vC, conflicting volume	1507	1796	263	1608	1897	290	526			579		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1507	1796	263	1608	1897	290	526			579		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	90	95	100	100	62			100		
cM capacity (veh/h)	58	49	735	44	42	707	1037			991		
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	139	75	396	290	290	217	309					
Volume Left	139	0	396	0	0	0	0					
Volume Right	0	75	0	0	0	0	201					
cSH	58	735	1037	1700	1700	1700	1700					
Volume to Capacity	2.38	0.10	0.38	0.17	0.17	0.13	0.18					
Queue Length 95th (ft)	346	8	45	0	0	0	0					
Control Delay (s)	778.4	10.4	10.6	0.0	0.0	0.0	0.0					
Lane LOS	F	B	B									
Approach Delay (s)	509.2		4.3			0.0						
Approach LOS	F											
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			Err%		ICU Level of Service				H			
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #25
Oak Street / Embarcadero
Cumulative plus Commercial
AM Peak Hour

PART A or PART B satisfied YES NO

PART A PART A satisfied YES NO

(All parts 1, 2, and 3 below must be satisfied)

1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and
 Yes No 30.3

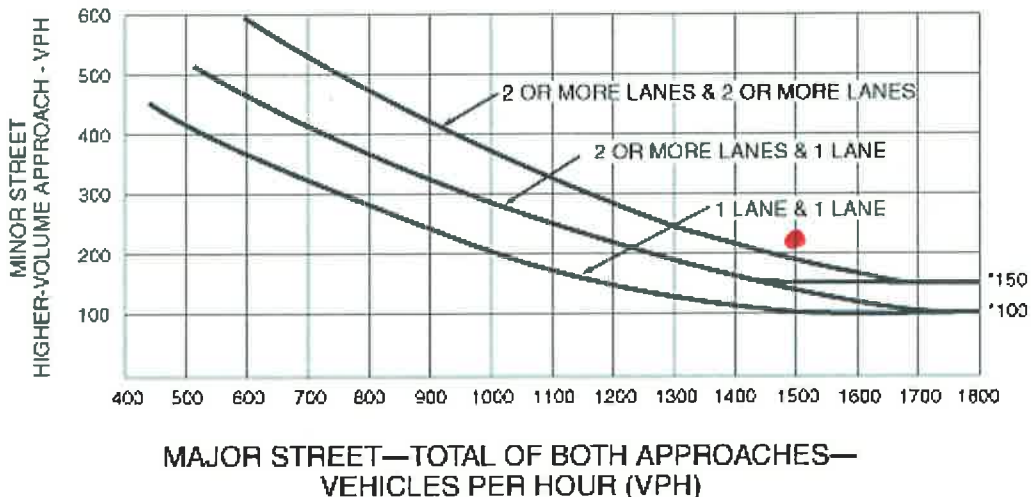
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
 Yes No 214

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
 Yes No 1717

PART B PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



1500 / 214

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street






















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	63	94	153	762	596	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.92		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1679		1770	1863	1863	1583
Flt Permitted	0.98		0.40	1.00	1.00	1.00
Satd. Flow (perm)	1679		751	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	63	94	153	762	596	106
RTOR Reduction (vph)	82	0	0	0	0	28
Lane Group Flow (vph)	75	0	153	762	596	78
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	6.8		40.3	40.3	40.3	40.3
Effective Green, g (s)	6.8		40.3	40.3	40.3	40.3
Actuated g/C Ratio	0.12		0.73	0.73	0.73	0.73
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207		549	1362	1362	1157
v/s Ratio Prot	c0.04			c0.41	0.32	
v/s Ratio Perm			0.20			0.05
v/c Ratio	0.36		0.28	0.56	0.44	0.07
Uniform Delay, d1	22.2		2.5	3.4	2.9	2.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1		1.3	1.7	1.0	0.1
Delay (s)	23.2		3.8	5.0	3.9	2.2
Level of Service	C		A	A	A	A
Approach Delay (s)	23.2			4.8	3.7	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			
















HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Volume (vph)	269	682	155	0	0	0	0	608	233	3	259	0
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	
Lane Util. Factor		0.91						0.95			1.00	
Frt		0.98						0.96			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		4919						3392			1862	
Flt Permitted		0.99						1.00			0.99	
Satd. Flow (perm)		4919						3392			1845	
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
Adj. Flow (vph)	269	682	155	0	0	0	0	608	233	3	259	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	89	0	0	0	0
Lane Group Flow (vph)	0	1056	0	0	0	0	0	752	0	0	262	0
Turn Type	Split	NA						NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases										6		
Actuated Green, G (s)		22.0						15.0			15.0	
Effective Green, g (s)		22.0						15.0			15.0	
Actuated g/C Ratio		0.49						0.33			0.33	
Clearance Time (s)		4.0						4.0			4.0	
Lane Grp Cap (vph)		2404						1130			615	
v/s Ratio Prot		c0.21						c0.22				
v/s Ratio Perm											0.14	
v/c Ratio		0.44						0.67			0.43	
Uniform Delay, d1		7.5						12.9			11.7	
Progression Factor		1.00						1.00			1.19	
Incremental Delay, d2		0.6						3.1			2.1	
Delay (s)		8.1						16.0			16.0	
Level of Service		A						B			B	
Approach Delay (s)		8.1			0.0			16.0			16.0	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.0					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			45.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			53.0%					ICU Level of Service		A		
Analysis Period (min)			15									
c	Critical Lane Group											















HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	179	61	527	150	482	0	0	0	0	
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					
Lane Util. Factor					0.91	0.91		0.95					
Frt					0.92	0.85		1.00					
Flt Protected					0.98	1.00		0.99					
Satd. Flow (prot)					2762	1297		3148					
Flt Permitted					0.98	1.00		0.99					
Satd. Flow (perm)					2762	1297		3148					
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	
Adj. Flow (vph)	0	0	0	179	61	527	150	482	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	83	83	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	421	180	0	632	0	0	0	0	
Turn Type				Split	NA	Perm	Split	NA					
Protected Phases				8	8		2	2					
Permitted Phases						8							
Actuated Green, G (s)					22.0	22.0		15.0					
Effective Green, g (s)					22.0	22.0		15.0					
Actuated g/C Ratio					0.49	0.49		0.33					
Clearance Time (s)					4.0	4.0		4.0					
Lane Grp Cap (vph)					1350	634		1049					
v/s Ratio Prot					c0.15			c0.20					
v/s Ratio Perm						0.14							
v/c Ratio					0.31	0.28		0.60					
Uniform Delay, d1					6.9	6.8		12.5					
Progression Factor					1.00	1.00		0.79					
Incremental Delay, d2					0.6	1.1		2.0					
Delay (s)					7.5	7.9		11.9					
Level of Service					A	A		B					
Approach Delay (s)		0.0			7.7			11.9			0.0		
Approach LOS		A			A			B			A		
Intersection Summary													
HCM 2000 Control Delay			9.6		HCM 2000 Level of Service				A				
HCM 2000 Volume to Capacity ratio			0.43										
Actuated Cycle Length (s)			45.0		Sum of lost time (s)				8.0				
Intersection Capacity Utilization			50.5%		ICU Level of Service				A				
Analysis Period (min)			15										
c Critical Lane Group													


















HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	416	0	0	0	0	0	941	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5708						4515				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5708						4515				
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
Adj. Flow (vph)	108	416	0	0	0	0	0	941	93	0	0	0
RTOR Reduction (vph)	0	25	0	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	499	0	0	0	0	0	1014	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		27.0						24.0				
Effective Green, g (s)		27.0						24.0				
Actuated g/C Ratio		0.45						0.40				
Clearance Time (s)		4.5						4.5				
Lane Grp Cap (vph)		2568						1806				
v/s Ratio Prot								c0.22				
v/s Ratio Perm		0.09										
v/c Ratio		0.19						0.56				
Uniform Delay, d1		9.9						13.9				
Progression Factor		1.25						1.00				
Incremental Delay, d2		0.2						1.3				
Delay (s)		12.6						15.2				
Level of Service		B						B				
Approach Delay (s)		12.6			0.0			15.2			0.0	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			14.3					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)			9.0	
Intersection Capacity Utilization			69.6%					ICU Level of Service			C	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	70	426	19	20	664	436	75	45	56	390	16	137
Peak Hour 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
Hourly flow rate (vph)	70	426	19	20	664	436	75	45	56	390	16	137
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	515	684	436	176	543							
Volume Left (vph)	70	20	0	75	390							
Volume Right (vph)	19	0	436	56	137							
Hadj (s)	0.04	0.05	-0.67	-0.07	0.03							
Departure Headway (s)	8.3	8.6	7.9	9.5	8.2							
Degree Utilization, x	1.19	1.63	0.95	0.46	1.23							
Capacity (veh/h)	439	423	452	367	436							
Control Delay (s)	131.9	315.9	58.6	20.3	149.4							
Approach Delay (s)	131.9	215.7		20.3	149.4							
Approach LOS	F	F		C	F							
Intersection Summary												
Delay			167.5									
Level of Service			F									
Intersection Capacity Utilization			111.0%	ICU Level of Service	H							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

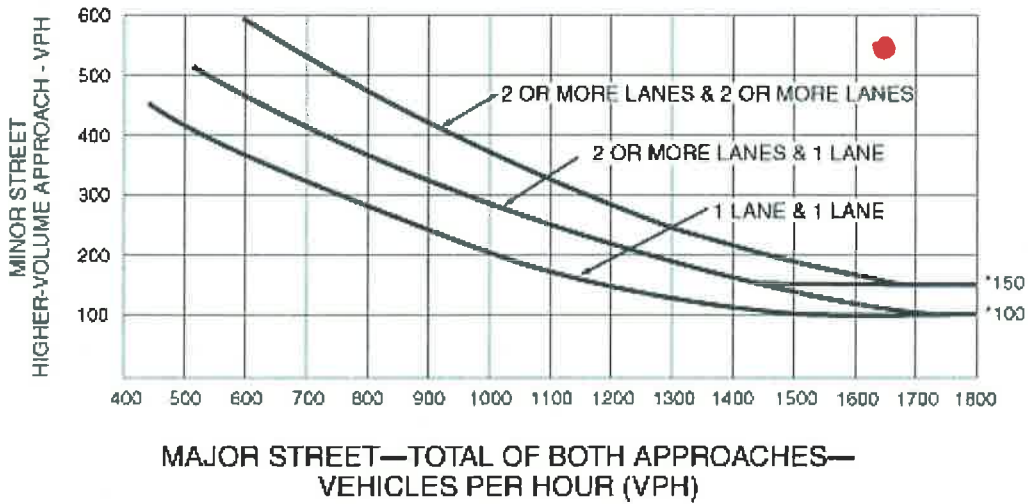
Intersection #30
5th Avenue / Embarcadero
Cumulative plus Commercial
AM Peak Hour

PART B

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.




























Figure 4C-3. Warrant 3, Peak Hour



***Note:** 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.





























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	
Volume (vph)	269	193	68	38	334	106	77	866	37	58	627	344
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
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3411		1770	3518		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3411		1770	3518		1770	3539	1583
Peak-hour factor, 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)	292	210	74	41	363	115	84	941	40	63	682	374
RTOR Reduction (vph)	0	0	50	0	31	0	0	3	0	0	0	315
Lane Group Flow (vph)	292	210	24	41	447	0	84	978	0	63	682	59
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									
Actuated Green, G (s)	12.3	25.6	25.6	4.6	17.9		7.3	25.4		6.8	24.9	12.3
Effective Green, g (s)	12.3	25.6	25.6	4.6	17.9		7.3	25.4		6.8	24.9	12.3
Actuated g/C Ratio	0.16	0.33	0.33	0.06	0.23		0.09	0.32		0.09	0.32	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	538	1155	516	103	778		164	1139		153	1123	248
v/s Ratio Prot	c0.09	0.06		0.02	c0.13		c0.05	c0.28		0.04	0.19	0.04
v/s Ratio Perm			0.02									
v/c Ratio	0.54	0.18	0.05	0.40	0.57		0.51	0.86		0.41	0.61	0.24
Uniform Delay, d1	30.5	18.9	18.1	35.6	26.9		33.9	24.8		33.9	22.6	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.0	2.5	1.0		2.7	8.5		1.8	2.4	0.5
Delay (s)	31.6	19.0	18.1	38.1	27.9		36.5	33.3		35.7	25.1	29.4
Level of Service	C	B	B	D	C		D	C		D	C	C
Approach Delay (s)		25.3			28.7			33.6			27.1	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.1			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			78.4			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			62.1%			ICU Level of Service				B		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue


















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	 		 	 	
Volume (vph)	152	283	124	65	338	162	119	906	47	125	510	57
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
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.95		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3377		1770	3367		3433	3539	1583	3433	3539	1583
Peak-hour factor, 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)	165	308	135	71	367	176	129	985	51	136	554	62
RTOR Reduction (vph)	0	46	0	0	59	0	0	0	35	0	0	43
Lane Group Flow (vph)	165	397	0	71	484	0	129	985	16	136	554	19
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.9	23.6		7.3	18.0		8.5	24.4	24.4	8.7	24.6	24.6
Effective Green, g (s)	12.9	23.6		7.3	18.0		8.5	24.4	24.4	8.7	24.6	24.6
Actuated g/C Ratio	0.16	0.30		0.09	0.22		0.11	0.30	0.30	0.11	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	285	996		161	757		364	1079	482	373	1088	486
v/s Ratio Prot	c0.09	0.12		0.04	c0.14		0.04	c0.28		c0.04	0.16	
v/s Ratio Perm									0.01			0.01
v/c Ratio	0.58	0.40		0.44	0.64		0.35	0.91	0.03	0.36	0.51	0.04
Uniform Delay, d1	31.0	22.5		34.4	28.1		33.2	26.8	19.5	33.1	22.7	19.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.3		1.9	1.8		0.6	13.1	0.1	0.6	1.7	0.2
Delay (s)	33.9	22.8		36.3	29.8		33.8	39.9	19.6	33.7	24.4	19.6
Level of Service	C	C		D	C		C	D	B	C	C	B
Approach Delay (s)		25.8			30.6			38.3			25.7	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			31.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			80.0				Sum of lost time (s)		16.0			
Intersection Capacity Utilization			64.9%				ICU Level of Service			C		
Analysis Period (min)			15									
c	Critical Lane Group											

Level Of Service Computation Report

Cumulative plus Project (Maximum Commercial Scenario) Conditions
PM Peak Hour

























HCM Unsignalized Intersection Capacity Analysis

1: Market Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	277	22	16	165	115	53	154	33	49	59	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	53	277	22	16	165	115	53	154	33	49	59	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	280			299			578	706	150	609	660	140
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	280			299			578	706	150	609	660	140
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			83	55	96	78	84	95
cM capacity (veh/h)	1280			1259			320	340	870	226	361	882
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3				
Volume Total	192	160	98	198	240	49	39	60				
Volume Left	53	0	16	0	53	49	0	0				
Volume Right	0	22	0	115	33	0	0	40				
cSH	1280	1700	1259	1700	365	226	361	598				
Volume to Capacity	0.04	0.09	0.01	0.12	0.66	0.22	0.11	0.10				
Queue Length 95th (ft)	3	0	1	0	112	20	9	8				
Control Delay (s)	2.5	0.0	1.4	0.0	31.8	25.2	16.2	11.7				
Lane LOS	A		A		D	D	C	B				
Approach Delay (s)	1.3		0.5		31.8	17.4						
Approach LOS					D	C						
Intersection Summary												
Average Delay			10.4									
Intersection Capacity Utilization			48.3%		ICU Level of Service				A			
Analysis Period (min)			15									


















HCM Signalized Intersection Capacity Analysis

2: Market Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  						  		  	  		
Volume (vph)	6	496	22	0	0	0	0	297	35	105	108	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						4.5		4.5	4.5		
Lane Util. Factor		0.91						0.95		1.00	0.91		
Frt		0.99						0.98		1.00	1.00		
Flt Protected		1.00						1.00		0.95	1.00		
Satd. Flow (prot)		5050						3483		1770	5085		
Flt Permitted		1.00						1.00		0.48	1.00		
Satd. Flow (perm)		5050						3483		890	5085		
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	
Adj. Flow (vph)	6	496	22	0	0	0	0	297	35	105	108	0	
RTOR Reduction (vph)	0	5	0	0	0	0	0	10	0	0	0	0	
Lane Group Flow (vph)	0	519	0	0	0	0	0	322	0	105	108	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		58.5						21.5		21.5	21.5		
Effective Green, g (s)		58.5						21.5		21.5	21.5		
Actuated g/C Ratio		0.65						0.24		0.24	0.24		
Clearance Time (s)		5.5						4.5		4.5	4.5		
Vehicle Extension (s)		3.0						3.0		3.0	3.0		
Lane Grp Cap (vph)		3282						832		212	1214		
v/s Ratio Prot								0.09			0.02		
v/s Ratio Perm		0.10								c0.12			
v/c Ratio		0.16						0.39		0.50	0.09		
Uniform Delay, d1		6.1						28.7		29.6	26.6		
Progression Factor		1.00						1.00		0.86	0.84		
Incremental Delay, d2		0.1						1.4		8.0	0.1		
Delay (s)		6.2						30.1		33.4	22.5		
Level of Service		A						C		C	C		
Approach Delay (s)		6.2			0.0			30.1			27.9		
Approach LOS		A			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			18.0									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.25										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			39.6%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	0	0	0	32	156	293	17	45	265	0	0	172	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00		1.00	1.00			0.95	
Frt					1.00	0.85		1.00	1.00			1.00	
Flt Protected					0.99	1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3509	1583		1770	1863			3539	
Flt Permitted					0.99	1.00		0.64	1.00			1.00	
Satd. Flow (perm)					3509	1583		1198	1863			3539	
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	
Adj. Flow (vph)	0	0	0	32	156	293	17	45	265	0	0	172	
RTOR Reduction (vph)	0	0	0	0	0	256	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	188	37	0	62	265	0	0	172	
Turn Type				Perm	NA	Perm	Perm	Perm	NA			NA	
Protected Phases					8				2			6	
Permitted Phases				8		8	2	2					
Actuated Green, G (s)					11.3	11.3		69.7	69.7			69.7	
Effective Green, g (s)					11.3	11.3		69.7	69.7			69.7	
Actuated g/C Ratio					0.13	0.13		0.77	0.77			0.77	
Clearance Time (s)					4.5	4.5		4.5	4.5			4.5	
Vehicle Extension (s)					3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					440	198		927	1442			2740	
v/s Ratio Prot									c0.14			0.05	
v/s Ratio Perm					0.05	0.02		0.05					
v/c Ratio					0.43	0.19		0.07	0.18			0.06	
Uniform Delay, d1					36.4	35.2		2.4	2.7			2.4	
Progression Factor					1.05	2.15		0.11	0.49			1.00	
Incremental Delay, d2					0.7	0.5		0.1	0.3			0.0	
Delay (s)					38.9	76.3		0.4	1.6			2.5	
Level of Service					D	E		A	A			A	
Approach Delay (s)		0.0			61.7				1.4			2.4	
Approach LOS		A			E				A			A	
Intersection Summary													
HCM 2000 Control Delay			30.2		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.22										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)				9.0				
Intersection Capacity Utilization			39.6%		ICU Level of Service				A				
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Market Street & 6th Street



Movement	SBR
Lane Configurations	7
Volume (vph)	35
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	35
RTOR Reduction (vph)	8
Lane Group Flow (vph)	27
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	69.7
Effective Green, g (s)	69.7
Actuated g/C Ratio	0.77
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1225
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	2.3
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	2.4
Level of Service	A
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Market Street & 7th Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	991	89	44	424	46	242	266	57	66	116	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5022		1770	5011		1770	1813		1770	3539	1583
Flt Permitted	0.47	1.00		0.20	1.00		0.68	1.00		0.47	1.00	1.00
Satd. Flow (perm)	881	5022		374	5011		1264	1813		876	3539	1583
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
Adj. Flow (vph)	132	991	89	44	424	46	242	266	57	66	116	74
RTOR Reduction (vph)	0	12	0	0	16	0	0	9	0	0	0	42
Lane Group Flow (vph)	132	1068	0	44	454	0	242	314	0	66	116	32
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Effective Green, g (s)	39.0	39.0		39.0	39.0		36.5	36.5		36.5	36.5	36.5
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	404	2304		171	2299		542	778		376	1519	679
v/s Ratio Prot		c0.21			0.09			0.17			0.03	
v/s Ratio Perm	0.15			0.12			c0.19			0.08		0.02
v/c Ratio	0.33	0.46		0.26	0.20		0.45	0.40		0.18	0.08	0.05
Uniform Delay, d1	14.6	15.8		14.1	13.7		17.1	16.7		15.0	14.3	14.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.7		3.6	0.2		2.7	1.6		0.2	0.0	0.0
Delay (s)	16.8	16.5		17.7	13.9		19.8	18.3		15.2	14.3	14.1
Level of Service	B	B		B	B		B	B		B	B	B
Approach Delay (s)		16.5			14.2			18.9			14.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			16.4				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)		9.5			
Intersection Capacity Utilization			61.4%				ICU Level of Service			B		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

5: Castro Street & 11th Street























Movement	EBL	EBT	NBT	NBR	NEL	NER
Lane Configurations						
Volume (vph)	194	613	1398	44	76	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	
Lane Util. Factor	0.81	0.81	0.91		0.97	
Frt	1.00	1.00	1.00		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1290	5416	4556		2984	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1290	5416	4556		2984	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	194	613	1398	44	76	41
RTOR Reduction (vph)	111	65	3	0	0	0
Lane Group Flow (vph)	44	587	1439	0	117	0
Turn Type	Split	NA	NA		NA	
Protected Phases	4	4	2		8	
Permitted Phases						
Actuated Green, G (s)	24.0	24.0	29.2		16.8	
Effective Green, g (s)	24.0	24.0	29.2		16.8	
Actuated g/C Ratio	0.28	0.28	0.34		0.20	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	364	1529	1565		589	
v/s Ratio Prot	0.03	c0.11	c0.32		c0.04	
v/s Ratio Perm						
v/c Ratio	0.12	0.38	0.92		0.20	
Uniform Delay, d1	22.7	24.6	26.8		28.5	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.7	10.2		0.2	
Delay (s)	23.3	25.3	37.0		28.6	
Level of Service	C	C	D		C	
Approach Delay (s)		24.9	37.0		28.6	
Approach LOS		C	D		C	

Intersection Summary


















HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: Castro Street & 12th Street

















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 		 	  				
Volume (vph)	0	0	0	0	249	802	36	1783	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5	4.5	5.0	5.0				
Lane Util. Factor					0.91	0.91	0.81	0.81				
Frt					0.91	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					2769	1297	1290	5431				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					2769	1297	1290	5431				
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
Adj. Flow (vph)	0	0	0	0	249	802	36	1783	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	15	17	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	649	386	15	1777	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					34.9	34.9	40.6	40.6				
Effective Green, g (s)					34.9	34.9	40.6	40.6				
Actuated g/C Ratio					0.41	0.41	0.48	0.48				
Clearance Time (s)					4.5	4.5	5.0	5.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					1136	532	616	2594				
v/s Ratio Prot					0.23							
v/s Ratio Perm						c0.30	0.01	0.33				
v/c Ratio					0.57	0.72	0.02	0.69				
Uniform Delay, d1					19.3	21.0	11.7	17.2				
Progression Factor					1.00	1.00	0.02	0.26				
Incremental Delay, d2					0.7	4.9	0.0	1.0				
Delay (s)					20.0	25.9	0.3	5.5				
Level of Service					B	C	A	A				
Approach Delay (s)		0.0			22.2			5.4			0.0	
Approach LOS		A			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.6		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			85.0		Sum of lost time (s)					9.5		
Intersection Capacity Utilization			70.8%		ICU Level of Service					C		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 7: Broadway & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	27	155	87	12	130	101	49	238	17	328	294	85
Peak Hour 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
Hourly flow rate (vph)	27	155	87	12	130	101	49	238	17	328	294	85
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	269	243	304	475	232							
Volume Left (vph)	27	12	49	328	0							
Volume Right (vph)	87	101	17	0	85							
Hadj (s)	-0.14	-0.21	0.03	0.38	-0.22							
Departure Headway (s)	7.4	7.5	7.4	7.7	7.1							
Degree Utilization, x	0.56	0.51	0.62	1.01	0.45							
Capacity (veh/h)	457	445	467	464	507							
Control Delay (s)	19.4	17.9	21.9	71.3	14.6							
Approach Delay (s)	19.4	17.9	21.9	52.7								
Approach LOS	C	C	C	F								
Intersection Summary												
Delay			35.1									
Level of Service			E									
Intersection Capacity Utilization			70.2%	ICU Level of Service	C							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

8: Broadway & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	20	10	13	20	49	59	728	161	135	610	84
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	26	20	10	13	20	49	59	728	161	135	610	84
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											288	
pX, platoon unblocked	0.89	0.89	0.89	0.89	0.89		0.89					
vC, conflicting volume	1463	1929	347	1522	1890	444	694			889		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1277	1799	25	1342	1756	444	414			889		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	58	63	99	78	66	91	94			82		
cM capacity (veh/h)	62	55	932	58	58	561	1018			758		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	56	82	423	525	440	389						
Volume Left	26	13	59	0	135	0						
Volume Right	10	49	0	161	0	84						
cSH	70	125	1018	1700	758	1700						
Volume to Capacity	0.80	0.65	0.06	0.31	0.18	0.23						
Queue Length 95th (ft)	95	87	5	0	16	0						
Control Delay (s)	154.3	76.4	1.8	0.0	4.9	0.0						
Lane LOS	F	F	A		A							
Approach Delay (s)	154.3	76.4	0.8		2.6							
Approach LOS	F	F										
Intersection Summary												
Average Delay			9.3									
Intersection Capacity Utilization			67.7%	ICU Level of Service	C							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #8
Broadway / 2nd Street
Cumulative plus Commercial
PM Peak Hour

PART A or PART B satisfied YES NO

PART A

PART A satisfied YES NO

(All parts 1, 2, and 3 below must be satisfied)

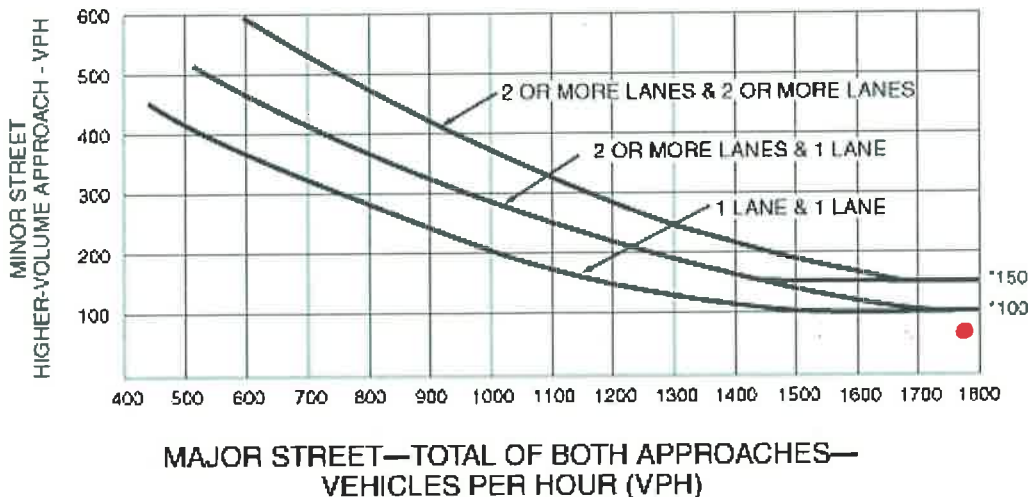
1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and Yes No 2.4
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and Yes No 80
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches. Yes No 1915

PART B

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.



















Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
























HCM Signalized Intersection Capacity Analysis

9: Broadway & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	133	28	10	118	117	77	464	18	106	554	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			0.95			0.95	
Frt	1.00	0.97			0.94			1.00			0.97	
Flt Protected	0.95	1.00			1.00			0.99			0.99	
Satd. Flow (prot)	1770	1814			1739			3498			3413	
Flt Permitted	0.59	1.00			0.99			0.73			0.79	
Satd. Flow (perm)	1091	1814			1724			2583			2709	
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
Adj. Flow (vph)	106	133	28	10	118	117	77	464	18	106	554	162
RTOR Reduction (vph)	0	10	0	0	44	0	0	3	0	0	28	0
Lane Group Flow (vph)	106	151	0	0	201	0	0	556	0	0	794	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	32.0			32.0			34.0			34.0	
Effective Green, g (s)	32.0	32.0			32.0			34.0			34.0	
Actuated g/C Ratio	0.43	0.43			0.43			0.45			0.45	
Clearance Time (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	465	773			735			1170			1228	
v/s Ratio Prot		0.08										
v/s Ratio Perm	0.10				c0.12			0.22			c0.29	
v/c Ratio	0.23	0.19			0.27			0.47			0.65	
Uniform Delay, d1	13.7	13.4			14.0			14.3			15.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.1	0.6			0.9			1.4			2.6	
Delay (s)	14.8	14.0			14.9			15.7			18.5	
Level of Service	B	B			B			B			B	
Approach Delay (s)		14.3			14.9			15.7			18.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			16.6					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			75.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			76.8%					ICU Level of Service		D		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis

10: Broadway & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 			
Volume (vph)	1162	339	84	0	0	0	0	479	582	879	477	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Lane Util. Factor	0.91	0.91	1.00					0.95	1.00	0.97	1.00		
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1610	3286	1583					3539	1583	3433	1863		
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1610	3286	1583					3539	1583	3433	1863		
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	
Adj. Flow (vph)	1162	339	84	0	0	0	0	479	582	879	477	0	
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	129	0	0	0	
Lane Group Flow (vph)	581	920	28	0	0	0	0	479	453	879	477	0	
Turn Type	Split	NA	Prot					NA	Perm	Prot	NA		
Protected Phases	4	4	4					2		1	6		
Permitted Phases									2				
Actuated Green, G (s)	30.5	30.5	30.5					24.5	24.5	21.5	49.5		
Effective Green, g (s)	30.5	30.5	30.5					24.5	24.5	21.5	49.5		
Actuated g/C Ratio	0.34	0.34	0.34					0.27	0.27	0.24	0.55		
Clearance Time (s)	5.5	5.5	5.5					3.5	3.5	4.5	4.5		
Vehicle Extension (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	545	1113	536					963	430	820	1024		
v/s Ratio Prot	c0.36	0.28	0.02					0.14		c0.26	0.26		
v/s Ratio Perm									c0.29				
v/c Ratio	1.07	1.02dl	0.05					0.50	1.05	1.07	0.47		
Uniform Delay, d1	29.8	27.3	20.0					27.6	32.8	34.2	12.3		
Progression Factor	0.90	0.90	0.77					1.00	1.00	1.31	1.87		
Incremental Delay, d2	57.3	4.9	0.0					1.8	58.3	49.6	0.1		
Delay (s)	84.1	29.4	15.4					29.4	91.1	94.6	23.1		
Level of Service	F	C	B					C	F	F	C		
Approach Delay (s)		48.7			0.0			63.2			69.4		
Approach LOS		D			A			E			E		
Intersection Summary													
HCM 2000 Control Delay			59.6									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.06										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			143.4%									ICU Level of Service	H
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													


















HCM Signalized Intersection Capacity Analysis

11: Broadway & 6th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	327	174	791	112	402	0	0	902	41
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	
Lane Util. Factor				1.00	0.95	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1593	3185	1425	1593	3185			4547	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1593	3185	1425	1593	3185			4547	
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
Adj. Flow (vph)	0	0	0	327	174	791	112	402	0	0	902	41
RTOR Reduction (vph)	0	0	0	0	0	212	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	327	174	579	112	402	0	0	938	0
Turn Type				Split	NA	Prot	Prot	NA			NA	
Protected Phases				8	8	8	5	2			6	
Permitted Phases												
Actuated Green, G (s)				37.9	37.9	37.9	15.2	44.1			24.9	
Effective Green, g (s)				37.9	37.9	37.9	15.2	44.1			24.9	
Actuated g/C Ratio				0.42	0.42	0.42	0.17	0.49			0.28	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				670	1341	600	269	1560			1258	
v/s Ratio Prot				0.21	0.05	c0.41	c0.07	0.13			c0.21	
v/s Ratio Perm												
v/c Ratio				0.49	0.13	0.96	0.42	0.26			0.75	
Uniform Delay, d1				19.0	16.0	25.4	33.4	13.4			29.7	
Progression Factor				1.00	1.00	1.00	0.86	1.03			1.00	
Incremental Delay, d2				0.6	0.0	27.8	0.6	0.2			4.0	
Delay (s)				19.5	16.0	53.2	29.3	14.0			33.7	
Level of Service				B	B	D	C	B			C	
Approach Delay (s)		0.0			39.7			17.4			33.7	
Approach LOS		A			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			33.4		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)					12.0		
Intersection Capacity Utilization			143.4%		ICU Level of Service					H		
Analysis Period (min)			15									
c	Critical Lane Group											


















HCM Signalized Intersection Capacity Analysis

12: Broadway & 11th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	813	314	0	0	0	0	491	80	127	922	0
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	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.98		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4532	1425					3118		1593	3185	
Flt Permitted		0.99	1.00					1.00		0.37	1.00	
Satd. Flow (perm)		4532	1425					3118		621	3185	
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
Adj. Flow (vph)	199	813	314	0	0	0	0	491	80	127	922	0
RTOR Reduction (vph)	0	0	56	0	0	0	0	21	0	0	0	0
Lane Group Flow (vph)	0	1012	258	0	0	0	0	550	0	127	922	0
Turn Type	Split	NA	Perm					NA		pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			4							6		
Actuated Green, G (s)		23.0	23.0					21.0		29.0	29.0	
Effective Green, g (s)		23.0	23.0					21.0		29.0	29.0	
Actuated g/C Ratio		0.38	0.38					0.35		0.48	0.48	
Clearance Time (s)		4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		1737	546					1091		364	1539	
v/s Ratio Prot		c0.22						0.18		0.02	c0.29	
v/s Ratio Perm			0.18							0.14		
v/c Ratio		0.58	0.47					0.50		0.35	0.60	
Uniform Delay, d1		14.7	13.9					15.4		12.2	11.3	
Progression Factor		1.00	1.00					1.00		0.72	0.77	
Incremental Delay, d2		0.5	0.6					1.7		0.4	1.3	
Delay (s)		15.2	14.6					17.1		9.2	10.0	
Level of Service		B	B					B		A	B	
Approach Delay (s)		15.0			0.0			17.1			9.9	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.6					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		12.0		
Intersection Capacity Utilization			71.0%					ICU Level of Service			C	
Analysis Period (min)			15									
c	Critical Lane Group											

















HCM Signalized Intersection Capacity Analysis

13: Broadway & 12th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	215	692	127	136	484	0	0	801	109
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	
Lane Util. Factor					0.95		1.00	0.95			0.91	
Flt					0.98		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3094		1593	3185			4495	
Flt Permitted					0.99		0.23	1.00			1.00	
Satd. Flow (perm)					3094		378	3185			4495	
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
Adj. Flow (vph)	0	0	0	215	692	127	136	484	0	0	801	109
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	29	0
Lane Group Flow (vph)	0	0	0	0	1016	0	136	484	0	0	881	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					26.0		26.0	26.0			18.0	
Effective Green, g (s)					26.0		26.0	26.0			18.0	
Actuated g/C Ratio					0.43		0.43	0.43			0.30	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)					1340		244	1380			1348	
v/s Ratio Prot					c0.33		c0.04	0.15			c0.20	
v/s Ratio Perm							0.20					
v/c Ratio					0.76		0.56	0.35			0.65	
Uniform Delay, d1					14.3		17.8	11.4			18.3	
Progression Factor					1.00		0.46	0.50			1.53	
Incremental Delay, d2					4.1		7.7	0.6			1.5	
Delay (s)					18.4		16.0	6.3			29.5	
Level of Service					B		B	A			C	
Approach Delay (s)		0.0			18.4			8.4			29.5	
Approach LOS		A			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			19.9		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			60.0		Sum of lost time (s)						12.0	
Intersection Capacity Utilization			71.0%		ICU Level of Service						C	
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis

14: Broadway & 14th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	6	328	112	5	582	175	2	569	39	0	998	127	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5			5.5			5.5			5.5		
Lane Util. Factor		0.95			0.95			0.95			0.95		
Frt		0.96			0.97			0.99			0.98		
Flt Protected		1.00			1.00			1.00			1.00		
Satd. Flow (prot)		3063			3075			3154			3131		
Flt Permitted		0.94			0.95			0.95			1.00		
Satd. Flow (perm)		2894			2928			3002			3131		
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	
Adj. Flow (vph)	6	328	112	5	582	175	2	569	39	0	998	127	
RTOR Reduction (vph)	0	29	0	0	46	0	0	8	0	0	16	0	
Lane Group Flow (vph)	0	417	0	0	716	0	0	602	0	0	1109	0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA		
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2						
Actuated Green, G (s)		23.5			23.5			25.5			25.5		
Effective Green, g (s)		23.5			23.5			25.5			25.5		
Actuated g/C Ratio		0.39			0.39			0.42			0.42		
Clearance Time (s)		5.5			5.5			5.5			5.5		
Lane Grp Cap (vph)		1133			1146			1275			1330		
v/s Ratio Prot											c0.35		
v/s Ratio Perm		0.14			c0.24			0.20					
v/c Ratio		0.37			0.62			0.47			0.83		
Uniform Delay, d1		13.0			14.7			12.4			15.4		
Progression Factor		1.00			1.00			1.42			1.00		
Incremental Delay, d2		0.9			2.6			1.2			6.3		
Delay (s)		13.9			17.3			18.8			21.6		
Level of Service		B			B			B			C		
Approach Delay (s)		13.9			17.3			18.8			21.6		
Approach LOS		B			B			B			C		
Intersection Summary													
HCM 2000 Control Delay			18.7									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			72.4%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

















HCM Unsignalized Intersection Capacity Analysis

15: Franklin Street & 2nd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	87	39	18	83	0	0	0	0	9	32	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	87	39	18	83	0	0	0	0	9	32	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					384							
pX, platoon unblocked												
vC, conflicting volume	83			126			260	226	106	226	245	83
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			126			260	226	106	226	245	83
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	95	98
cM capacity (veh/h)	1514			1460			649	665	948	723	649	976
Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	126	101	25	34								
Volume Left	0	18	9	0								
Volume Right	39	0	0	18								
cSH	1700	1460	674	789								
Volume to Capacity	0.07	0.01	0.04	0.04								
Queue Length 95th (ft)	0	1	3	3								
Control Delay (s)	0.0	1.4	10.5	9.8								
Lane LOS		A	B	A								
Approach Delay (s)	0.0	1.4	10.1									
Approach LOS			B									
Intersection Summary												
Average Delay			2.6									
Intersection Capacity Utilization			25.7%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

16: Franklin Street & 3rd Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											 	
Volume (veh/h)	0	208	12	30	222	0	0	0	0	12	18	74
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	208	12	30	222	0	0	0	0	12	18	74
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		367			383							
pX, platoon unblocked												
vC, conflicting volume	222			220			579	496	214	496	502	222
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	222			220			579	496	214	496	502	222
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	97	96	91
cM capacity (veh/h)	1347			1349			370	465	826	476	461	818
Direction, Lane #												
	EB 1	WB 1	SB 1	SB 2								
Volume Total	220	252	21	83								
Volume Left	0	30	12	0								
Volume Right	12	0	0	74								
cSH	1700	1349	469	754								
Volume to Capacity	0.13	0.02	0.04	0.11								
Queue Length 95th (ft)	0	2	4	9								
Control Delay (s)	0.0	1.1	13.0	10.4								
Lane LOS		A	B	B								
Approach Delay (s)	0.0	1.1	10.9									
Approach LOS			B									
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			38.4%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	170	185	234	134	88	86
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	170	185	234	134	88	86
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	385					
pX, platoon unblocked						
vC, conflicting volume	0		470	340	525	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		470	340	525	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	90		34	74	79	92
cM capacity (veh/h)	1623		357	521	410	1085
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total	170	185	368	88	86	
Volume Left	170	0	234	0	0	
Volume Right	0	185	0	0	86	
cSH	1623	1700	403	410	1085	
Volume to Capacity	0.10	0.11	0.91	0.21	0.08	
Queue Length 95th (ft)	9	0	244	20	6	
Control Delay (s)	7.5	0.0	57.9	16.2	8.6	
Lane LOS	A		F	C	A	
Approach Delay (s)	3.6		57.9	12.4		
Approach LOS			F	B		
Intersection Summary						
Average Delay			27.6			
Intersection Capacity Utilization			42.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #17
Webster Street / Embarcadero
Cumulative plus Commercial
PM Peak Hour

PART A or PART B satisfied YES NO

PART A PART A satisfied YES NO

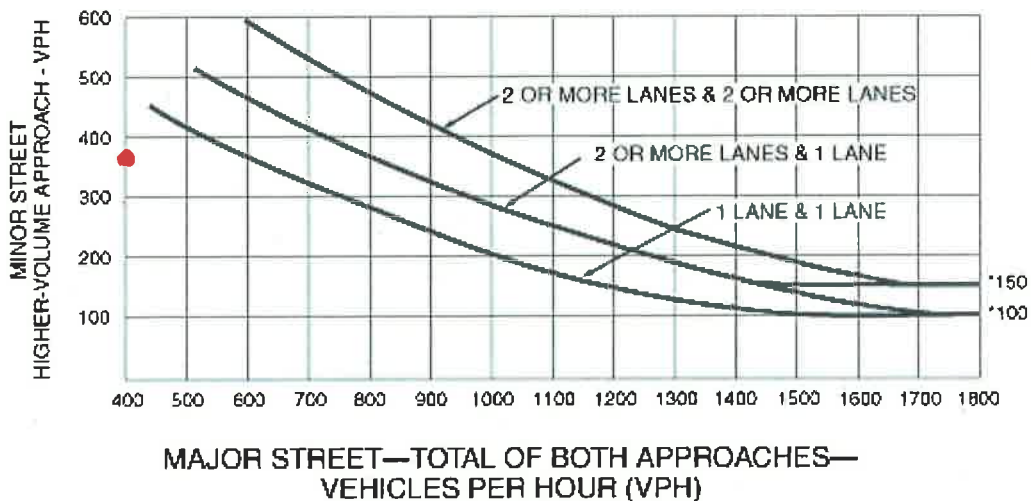
(All parts 1, 2, and 3 below must be satisfied)

- | | | |
|---|---|------------|
| 1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <u>5.9</u> |
| 2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <u>368</u> |
| 3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches. | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <u>897</u> |

PART B PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour















355 / 368
~~1000~~

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.





















HCM Signalized Intersection Capacity Analysis

18: Harrison Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑						↑↑↑	↑↑			
Volume (vph)	334	1529	0	0	0	0	0	688	1207	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0	5.0			
Lane Util. Factor		0.91						0.91	0.88			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4536						4577	2508			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4536						4577	2508			
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
Adj. Flow (vph)	334	1529	0	0	0	0	0	688	1207	0	0	0
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	20	0	0	0
Lane Group Flow (vph)	0	1840	0	0	0	0	0	688	1187	0	0	0
Turn Type	Perm	NA						NA	custom			
Protected Phases		2						1				
Permitted Phases	2								5			
Actuated Green, G (s)		32.0						18.0	29.0			
Effective Green, g (s)		32.0						18.0	29.0			
Actuated g/C Ratio		0.53						0.30	0.48			
Clearance Time (s)		5.0						5.0	5.0			
Vehicle Extension (s)		3.0						3.0	3.0			
Lane Grp Cap (vph)		2419						1373	1212			
v/s Ratio Prot								0.15				
v/s Ratio Perm		0.41							c0.47			
v/c Ratio		0.76						0.50	0.98			
Uniform Delay, d1		11.0						17.3	15.2			
Progression Factor		1.00						1.00	1.00			
Incremental Delay, d2		2.3						1.3	21.3			
Delay (s)		13.3						18.6	36.5			
Level of Service		B						B	D			
Approach Delay (s)		13.3			0.0			30.0			0.0	
Approach LOS		B			A			C			A	
Intersection Summary												
HCM 2000 Control Delay			21.7					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		10.0		
Intersection Capacity Utilization			95.6%					ICU Level of Service		F		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis




















19: Jackson Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  						 		 			
Volume (vph)	298	622	450	0	0	0	0	691	39	106	117	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.5		5.5	5.5		
Lane Util. Factor		0.91						1.00		1.00	1.00		
Frt		0.95						0.99		1.00	1.00		
Flt Protected		0.99						1.00		0.95	1.00		
Satd. Flow (prot)		4783						1849		1770	1863		
Flt Permitted		0.99						1.00		0.14	1.00		
Satd. Flow (perm)		4783						1849		253	1863		
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	
Adj. Flow (vph)	298	622	450	0	0	0	0	691	39	106	117	0	
RTOR Reduction (vph)	0	117	0	0	0	0	0	2	0	0	0	0	
Lane Group Flow (vph)	0	1253	0	0	0	0	0	728	0	106	117	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		4						2			6		
Permitted Phases	4									6			
Actuated Green, G (s)		34.5						29.5		29.5	29.5		
Effective Green, g (s)		34.5						29.5		29.5	29.5		
Actuated g/C Ratio		0.46						0.39		0.39	0.39		
Clearance Time (s)		5.5						5.5		5.5	5.5		
Lane Grp Cap (vph)		2200						727		99	732		
v/s Ratio Prot								0.39			0.06		
v/s Ratio Perm		0.26								c0.42			
v/c Ratio		0.57						1.00		1.07	0.16		
Uniform Delay, d1		14.8						22.8		22.8	14.7		
Progression Factor		1.00						1.00		0.69	0.70		
Incremental Delay, d2		1.1						33.6		110.1	0.5		
Delay (s)		15.9						56.3		125.8	10.7		
Level of Service		B						E		F	B		
Approach Delay (s)		15.9			0.0			56.3			65.4		
Approach LOS		B			A			E			E		
Intersection Summary													
HCM 2000 Control Delay			33.4									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.80										
Actuated Cycle Length (s)			75.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			112.0%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group

















HCM Signalized Intersection Capacity Analysis

20: Jackson Street & 6th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	11	389	53	474	434	0	0	248	514	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			5.5	4.0	
Lane Util. Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1593	1676	1425	1593	1676			1676	1425	
Flt Permitted				0.95	1.00	1.00	0.61	1.00			1.00	1.00	
Satd. Flow (perm)				1593	1676	1425	1014	1676			1676	1425	
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	
Adj. Flow (vph)	0	0	0	11	389	53	474	434	0	0	248	514	
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	11	389	14	474	434	0	0	248	514	
Turn Type				Split	NA	Perm	Perm	NA			NA	Free	
Protected Phases				8	8			2			6		
Permitted Phases						8	2					Free	
Actuated Green, G (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Effective Green, g (s)				19.5	19.5	19.5	44.5	44.5			44.5	75.0	
Actuated g/C Ratio				0.26	0.26	0.26	0.59	0.59			0.59	1.00	
Clearance Time (s)				5.5	5.5	5.5	5.5	5.5			5.5		
Lane Grp Cap (vph)				414	435	370	601	994			994	1425	
v/s Ratio Prot				0.01	c0.23			0.26			0.15		
v/s Ratio Perm						0.01	c0.47					0.36	
v/c Ratio				0.03	0.89	0.04	0.79	0.44			0.25	0.36	
Uniform Delay, d1				20.7	26.8	20.7	11.7	8.4			7.3	0.0	
Progression Factor				1.00	1.00	1.00	0.59	0.59			1.00	1.00	
Incremental Delay, d2				0.1	23.4	0.2	4.8	0.6			0.6	0.7	
Delay (s)				20.8	50.2	20.9	11.7	5.5			7.9	0.7	
Level of Service				C	D	C	B	A			A	A	
Approach Delay (s)		0.0			46.1			8.7			3.0		
Approach LOS		A			D			A			A		
Intersection Summary													
HCM 2000 Control Delay			14.7		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.82										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)					11.0			
Intersection Capacity Utilization			112.0%		ICU Level of Service					H			
Analysis Period (min)			15										
c Critical Lane Group													






















HCM Signalized Intersection Capacity Analysis

21: Jackson Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	1079	517	0	0	0	0	313	144	36	338	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0					4.0			4.0	
Lane Util. Factor		0.86	0.86					1.00			1.00	
Frt		0.98	0.85					0.96			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		4242	1226					1605			1668	
Flt Permitted		1.00	1.00					1.00			0.94	
Satd. Flow (perm)		4242	1226					1605			1572	
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
Adj. Flow (vph)	41	1079	517	0	0	0	0	313	144	36	338	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	1243	367	0	0	0	0	447	0	0	374	0
Turn Type	Split	NA	Free					NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases			Free							6		
Actuated Green, G (s)		22.0	60.0					29.0			29.0	
Effective Green, g (s)		22.0	60.0					29.0			29.0	
Actuated g/C Ratio		0.37	1.00					0.48			0.48	
Clearance Time (s)		5.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1555	1226					775			759	
v/s Ratio Prot		c0.29						c0.28				
v/s Ratio Perm			0.30								0.24	
v/c Ratio		0.80	0.30					0.58			0.49	
Uniform Delay, d1		17.0	0.0					11.1			10.5	
Progression Factor		1.00	1.00					1.00			1.00	
Incremental Delay, d2		4.4	0.6					3.1			2.3	
Delay (s)		21.4	0.6					14.2			12.8	
Level of Service		C	A					B			B	
Approach Delay (s)		16.8			0.0			14.2			12.8	
Approach LOS		B			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.7					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			60.0					Sum of lost time (s)		9.0		
Intersection Capacity Utilization			89.0%					ICU Level of Service		E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

22: Madison Street & 5th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  								  	  		
Volume (vph)	0	725	35	0	0	0	0	0	0	931	142	0	
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		
Lane Util. Factor		0.91								0.91	0.91		
Frt		0.99								1.00	1.00		
Flt Protected		1.00								0.95	0.96		
Satd. Flow (prot)		5050								1610	3265		
Flt Permitted		1.00								0.95	0.96		
Satd. Flow (perm)		5050								1610	3265		
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	
Adj. Flow (vph)	0	725	35	0	0	0	0	0	0	931	142	0	
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	35	35	0	
Lane Group Flow (vph)	0	749	0	0	0	0	0	0	0	430	573	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		16.0								22.0	22.0		
Effective Green, g (s)		16.0								22.0	22.0		
Actuated g/C Ratio		0.35								0.48	0.48		
Clearance Time (s)		4.0								4.0	4.0		
Lane Grp Cap (vph)		1756								770	1561		
v/s Ratio Prot		c0.15											
v/s Ratio Perm										c0.27	0.18		
v/c Ratio		0.43								0.56	0.37		
Uniform Delay, d1		11.5								8.5	7.6		
Progression Factor		1.00								1.00	1.00		
Incremental Delay, d2		0.8								2.9	0.7		
Delay (s)		12.2								11.5	8.3		
Level of Service		B								B	A		
Approach Delay (s)		12.2			0.0			0.0			9.6		
Approach LOS		B			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			10.7									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.50										
Actuated Cycle Length (s)			46.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			42.1%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis















23: Madison Street & 6th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	
Volume (vph)	0	0	0	18	210	0	0	0	0	0	1100	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.91						0.91	
Frt					1.00						0.97	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					4559						4459	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					4559						4459	
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
Adj. Flow (vph)	0	0	0	18	210	0	0	0	0	0	1100	227
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	70	0
Lane Group Flow (vph)	0	0	0	0	212	0	0	0	0	0	1257	0
Turn Type				Split	NA						NA	
Protected Phases				8	8						6	
Permitted Phases												
Actuated Green, G (s)					15.0						22.0	
Effective Green, g (s)					15.0						22.0	
Actuated g/C Ratio					0.33						0.49	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1519						2179	
v/s Ratio Prot					c0.05						c0.28	
v/s Ratio Perm												
v/c Ratio					0.14						0.58	
Uniform Delay, d1					10.5						8.2	
Progression Factor					0.88						1.00	
Incremental Delay, d2					0.1						1.1	
Delay (s)					9.3						9.3	
Level of Service					A						A	
Approach Delay (s)		0.0			9.3			0.0			9.3	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.3		HCM 2000 Level of Service					A		
HCM 2000 Volume to Capacity ratio			0.40									
Actuated Cycle Length (s)			45.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			42.1%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												





















HCM Signalized Intersection Capacity Analysis

24: Madison Street & 7th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	1045	342	0	0	0	0	0	0	309	905	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0									4.0		
Lane Util. Factor		0.86									0.91		
Frt		0.96									1.00		
Flt Protected		1.00									0.99		
Satd. Flow (prot)		5554									4519		
Flt Permitted		1.00									0.99		
Satd. Flow (perm)		5554									4519		
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	
Adj. Flow (vph)	0	1045	342	0	0	0	0	0	0	309	905	0	
RTOR Reduction (vph)	0	50	0	0	0	0	0	0	0	0	17	0	
Lane Group Flow (vph)	0	1337	0	0	0	0	0	0	0	0	1197	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									6		
Permitted Phases										6			
Actuated Green, G (s)		24.0									28.0		
Effective Green, g (s)		24.0									28.0		
Actuated g/C Ratio		0.40									0.47		
Clearance Time (s)		4.0									4.0		
Vehicle Extension (s)		3.0									3.0		
Lane Grp Cap (vph)		2221									2108		
v/s Ratio Prot		c0.24											
v/s Ratio Perm											0.26		
v/c Ratio		0.60									0.57		
Uniform Delay, d1		14.2									11.6		
Progression Factor		0.37									1.00		
Incremental Delay, d2		0.9									1.1		
Delay (s)		6.1									12.7		
Level of Service		A									B		
Approach Delay (s)		6.1			0.0			0.0			12.7		
Approach LOS		A			A			A			B		
Intersection Summary													
HCM 2000 Control Delay			9.2									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.58										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			56.3%									ICU Level of Service	B
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

25: Oak Street & 1st Street / Embarcadero

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations								 			 		
Volume (veh/h)	230	0	83	5	0	1	263	679	0	0	736	251	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour 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	
Hourly flow rate (vph)	230	0	83	5	0	1	263	679	0	0	736	251	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)												563	
pX, platoon unblocked													
vC, conflicting volume	1728	2066	494	1656	2192	340	987				679		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1728	2066	494	1656	2192	340	987				679		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	0	100	84	87	100	100	62				100		
cM capacity (veh/h)	40	33	521	38	28	656	696				909		
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2						
Volume Total	230	83	263	340	340	491	496						
Volume Left	230	0	263	0	0	0	0						
Volume Right	0	83	0	0	0	0	251						
cSH	40	521	696	1700	1700	1700	1700						
Volume to Capacity	5.75	0.16	0.38	0.20	0.20	0.29	0.29						
Queue Length 95th (ft)	Err	14	44	0	0	0	0						
Control Delay (s)	Err	13.2	13.3	0.0	0.0	0.0	0.0						
Lane LOS	F	B	B										
Approach Delay (s)	7351.0	3.7		0.0									
Approach LOS	F												
Intersection Summary													
Average Delay			Err										
Intersection Capacity Utilization			Err%					ICU Level of Service			H		
Analysis Period (min)			15										

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

Intersection #25
Oak Street / Embarcadero
Cumulative plus Commercial
PM Peak Hour

PART A or PART B satisfied YES NO

PART A PART A satisfied YES NO

(All parts 1, 2, and 3 below must be satisfied)

1. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and
 Yes No 639.1

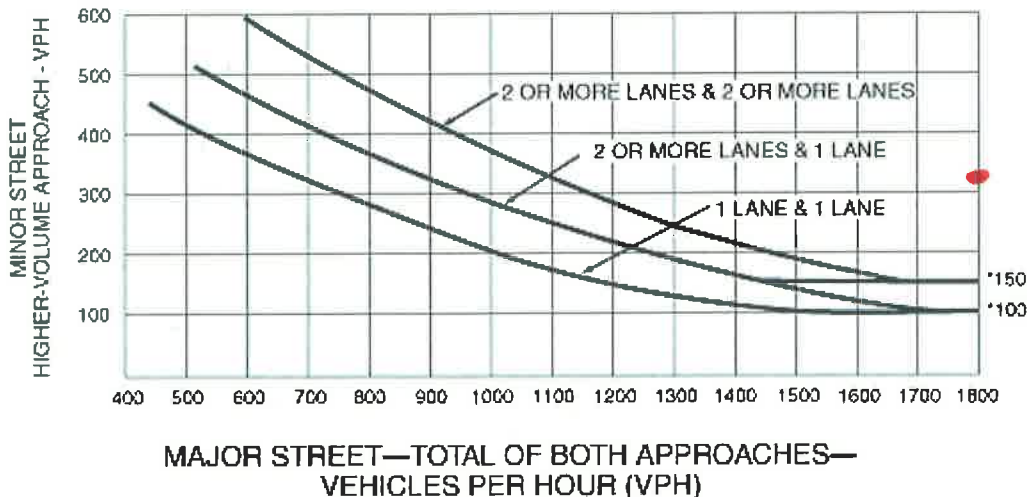
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
 Yes No 313

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
 Yes No 2248

PART B PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



1929/313

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

HCM Signalized Intersection Capacity Analysis

26: Oak Street & 3rd Street






















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	193	77	136	953	955	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1729		1770	1863	1863	1583
Flt Permitted	0.97		0.14	1.00	1.00	1.00
Satd. Flow (perm)	1729		270	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	193	77	136	953	955	210
RTOR Reduction (vph)	26	0	0	0	0	77
Lane Group Flow (vph)	244	0	136	953	955	133
Turn Type	NA		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	12.9		36.4	36.4	36.4	36.4
Effective Green, g (s)	12.9		36.4	36.4	36.4	36.4
Actuated g/C Ratio	0.23		0.64	0.64	0.64	0.64
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	389		171	1183	1183	1005
v/s Ratio Prot	c0.14			0.51	c0.51	
v/s Ratio Perm			0.50			0.08
v/c Ratio	0.63		0.80	0.81	0.81	0.13
Uniform Delay, d1	20.0		7.7	7.8	7.8	4.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1		30.7	5.9	6.0	0.3
Delay (s)	23.2		38.4	13.7	13.8	4.4
Level of Service	C		D	B	B	A
Approach Delay (s)	23.2			16.8	12.1	
Approach LOS	C			B	B	

Intersection Summary

HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			
















HCM Signalized Intersection Capacity Analysis

27: Oak Street & 5th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Volume (vph)	246	1016	140	0	0	0	0	917	396	6	261	0
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	
Lane Util. Factor		0.91						0.95			1.00	
Frt		0.99						0.95			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		4966						3379			1861	
Flt Permitted		0.99						1.00			0.60	
Satd. Flow (perm)		4966						3379			1111	
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
Adj. Flow (vph)	246	1016	140	0	0	0	0	917	396	6	261	0
RTOR Reduction (vph)	0	30	0	0	0	0	0	45	0	0	0	0
Lane Group Flow (vph)	0	1372	0	0	0	0	0	1268	0	0	267	0
Turn Type	Split	NA						NA		Perm	NA	
Protected Phases	4	4						2			6	
Permitted Phases										6		
Actuated Green, G (s)		22.0						15.0			15.0	
Effective Green, g (s)		22.0						15.0			15.0	
Actuated g/C Ratio		0.49						0.33			0.33	
Clearance Time (s)		4.0						4.0			4.0	
Lane Grp Cap (vph)		2427						1126			370	
v/s Ratio Prot		c0.28						c0.38				
v/s Ratio Perm											0.24	
v/c Ratio		0.57						1.13			0.72	
Uniform Delay, d1		8.1						15.0			13.2	
Progression Factor		1.00						1.00			1.24	
Incremental Delay, d2		1.0						68.4			11.3	
Delay (s)		9.1						83.4			27.6	
Level of Service		A						F			C	
Approach Delay (s)		9.1			0.0			83.4			27.6	
Approach LOS		A			A			F			C	
Intersection Summary												
HCM 2000 Control Delay			43.5					HCM 2000 Level of Service			D	
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			45.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			72.4%					ICU Level of Service		C		
Analysis Period (min)			15									
c Critical Lane Group												















HCM Signalized Intersection Capacity Analysis

28: Oak Street & 6th Street


















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	198	85	506	163	678	0	0	0	0
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				
Lane Util. Factor					0.91	0.91		0.95				
Frt					0.93	0.85		1.00				
Flt Protected					0.98	1.00		0.99				
Satd. Flow (prot)					2784	1297		3155				
Flt Permitted					0.98	1.00		0.99				
Satd. Flow (perm)					2784	1297		3155				
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
Adj. Flow (vph)	0	0	0	198	85	506	163	678	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	37	37	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	499	216	0	841	0	0	0	0
Turn Type				Split	NA	Perm	Split	NA				
Protected Phases				8	8		2	2				
Permitted Phases						8						
Actuated Green, G (s)					22.0	22.0		15.0				
Effective Green, g (s)					22.0	22.0		15.0				
Actuated g/C Ratio					0.49	0.49		0.33				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1361	634		1051				
v/s Ratio Prot					c0.18			c0.27				
v/s Ratio Perm						0.17						
v/c Ratio					0.37	0.34		0.80				
Uniform Delay, d1					7.2	7.1		13.6				
Progression Factor					1.00	1.00		0.92				
Incremental Delay, d2					0.8	1.5		0.6				
Delay (s)					7.9	8.5		13.1				
Level of Service					A	A		B				
Approach Delay (s)		0.0			8.1			13.1			0.0	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			10.7		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			45.0		Sum of lost time (s)						8.0	
Intersection Capacity Utilization			56.0%		ICU Level of Service						B	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

29: Oak Street & 7th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	1035	0	0	0	0	0	1060	211	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5						4.5				
Lane Util. Factor		0.86						0.91				
Frt		1.00						0.98				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5729						4463				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5729						4463				
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
Adj. Flow (vph)	161	1035	0	0	0	0	0	1060	211	0	0	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	0	1178	0	0	0	0	0	1243	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		21.0						24.2				
Effective Green, g (s)		21.0						24.2				
Actuated g/C Ratio		0.39						0.45				
Clearance Time (s)		4.5						4.5				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		2219						1992				
v/s Ratio Prot								c0.28				
v/s Ratio Perm		0.21										
v/c Ratio		0.53						0.62				
Uniform Delay, d1		12.8						11.5				
Progression Factor		1.00						1.00				
Incremental Delay, d2		0.2						1.5				
Delay (s)		13.0						13.0				
Level of Service		B						B				
Approach Delay (s)		13.0			0.0			13.0			0.0	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.0					HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			54.2					Sum of lost time (s)			9.0	
Intersection Capacity Utilization			75.1%					ICU Level of Service			D	
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	74	885	57	56	734	623	39	19	27	750	40	97
Peak Hour 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
Hourly flow rate (vph)	74	885	57	56	734	623	39	19	27	750	40	97
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	1016	790	623	85	887							
Volume Left (vph)	74	56	0	39	750							
Volume Right (vph)	57	0	623	27	97							
Hadj (s)	0.01	0.07	-0.67	-0.06	0.14							
Departure Headway (s)	7.7	8.1	7.4	9.5	7.7							
Degree Utilization, x	2.17	1.78	1.28	0.22	1.90							
Capacity (veh/h)	477	449	496	374	476							
Control Delay (s)	549.7	379.4	162.2	15.2	430.2							
Approach Delay (s)	549.7	283.6		15.2	430.2							
Approach LOS	F	F		C	F							
Intersection Summary												
Delay			394.6									
Level of Service			F									
Intersection Capacity Utilization			162.1%	ICU Level of Service	H							
Analysis Period (min)			15									

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

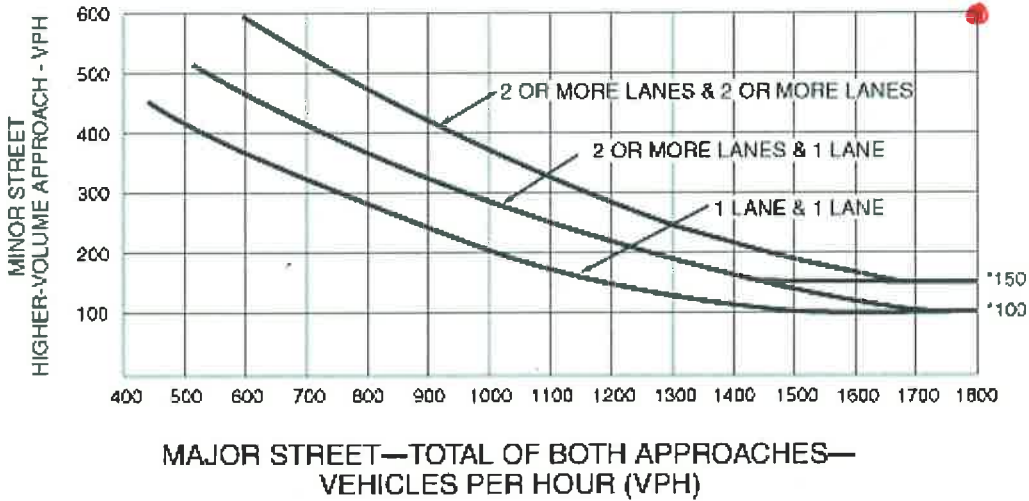
Intersection #30
5th Avenue / Embarcadero
Cumulative plus Commercial
PM Peak Hour

PART B

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour

























2429/887

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.





























HCM Signalized Intersection Capacity Analysis

31: Webster Street & Atlantic Avenue

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	216	59	166	581	113	33	534	49	89	815	166
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
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3453		1770	3495		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3453		1770	3495		1770	3539	1583
Peak-hour factor, 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)	263	235	64	180	632	123	36	580	53	97	886	180
RTOR Reduction (vph)	0	0	48	0	15	0	0	6	0	0	0	155
Lane Group Flow (vph)	263	235	16	180	740	0	36	627	0	97	886	25
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									
Actuated Green, G (s)	11.7	20.4	20.4	13.7	22.4		4.6	25.4		7.9	28.7	11.7
Effective Green, g (s)	11.7	20.4	20.4	13.7	22.4		4.6	25.4		7.9	28.7	11.7
Actuated g/C Ratio	0.14	0.24	0.24	0.16	0.27		0.06	0.30		0.09	0.34	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	481	865	387	290	927		97	1064		167	1217	222
v/s Ratio Prot	0.08	0.07		c0.10	c0.21		0.02	0.18		c0.05	c0.25	0.02
v/s Ratio Perm			0.01									
v/c Ratio	0.55	0.27	0.04	0.62	0.80		0.37	0.59		0.58	0.73	0.11
Uniform Delay, d1	33.4	25.5	24.0	32.4	28.4		38.0	24.6		36.2	23.9	31.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	0.0	4.1	4.8		2.4	2.4		5.1	3.8	0.2
Delay (s)	34.7	25.7	24.1	36.5	33.2		40.4	27.0		41.2	27.8	31.5
Level of Service	C	C	C	D	C		D	C		D	C	C
Approach Delay (s)		29.7			33.9			27.7			29.5	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			30.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			83.4			Sum of lost time (s)		16.0				
Intersection Capacity Utilization			65.8%			ICU Level of Service				C		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

32: Constitution Way & Atlantic Avenue

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 		 	 		 	 		
Volume (vph)	321	448	315	89	240	170	87	566	39	130	1150	119	
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	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00	
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3320		1770	3319		3433	3539	1583	3433	3539	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	3320		1770	3319		3433	3539	1583	3433	3539	1583	
Peak-hour factor, 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)	349	487	342	97	261	185	95	615	42	141	1250	129	
RTOR Reduction (vph)	0	115	0	0	141	0	0	0	30	0	0	69	
Lane Group Flow (vph)	349	714	0	97	305	0	95	615	12	141	1250	60	
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases									2			6	
Actuated Green, G (s)	20.5	26.3		8.5	14.3		6.3	25.2	25.2	8.9	27.8	27.8	
Effective Green, g (s)	20.5	26.3		8.5	14.3		6.3	25.2	25.2	8.9	27.8	27.8	
Actuated g/C Ratio	0.24	0.31		0.10	0.17		0.07	0.30	0.30	0.10	0.33	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	427	1028		177	559		254	1050	469	359	1158	518	
v/s Ratio Prot	c0.20	c0.21		0.05	0.09		0.03	0.17		c0.04	c0.35		
v/s Ratio Perm									0.01			0.04	
v/c Ratio	0.82	0.69		0.55	0.55		0.37	0.59	0.03	0.39	1.08	0.12	
Uniform Delay, d1	30.4	25.8		36.4	32.3		37.4	25.4	21.2	35.5	28.6	20.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.5	2.1		3.4	1.1		0.9	2.4	0.1	0.7	50.7	0.5	
Delay (s)	41.9	27.8		39.8	33.4		38.4	27.8	21.3	36.2	79.2	20.4	
Level of Service	D	C		D	C		D	C	C	D	E	C	
Approach Delay (s)		32.0			34.6			28.8			70.2		
Approach LOS		C			C			C			E		
Intersection Summary													
HCM 2000 Control Delay			46.3									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.89										
Actuated Cycle Length (s)			84.9									Sum of lost time (s)	16.0
Intersection Capacity Utilization			78.3%									ICU Level of Service	D
Analysis Period (min)			15										
c	Critical Lane Group												

Level Of Service Computation Report

Existing plus Project (Maximum Commercial Scenario) Conditions
AM and PM Peak Hours

MITIGATED INTERSECTIONS

HCM Unsignalized Intersection Capacity Analysis

17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	51	151	130	45	87	127
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	51	151	130	45	87	127
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total (vph)	51	151	175	87	127	
Volume Left (vph)	51	0	130	0	0	
Volume Right (vph)	0	151	0	0	127	
Hadj (s)	0.53	-0.67	0.18	0.03	-0.67	
Departure Headway (s)	6.0	4.8	5.2	5.2	4.5	
Degree Utilization, x	0.08	0.20	0.25	0.13	0.16	
Capacity (veh/h)	566	707	660	654	755	
Control Delay (s)	8.3	7.8	10.0	7.8	7.2	
Approach Delay (s)	7.9		10.0	7.4		
Approach LOS	A		B	A		
Intersection Summary						
Delay			8.4			
Level of Service			A			
Intersection Capacity Utilization			26.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

17: Webster Street & 1st Street / Embarcadero

12/11/2013



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	51	151	130	45	87	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Fr _t	1.00	0.85		1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.96	1.00	1.00
Satd. Flow (prot)	1770	1583		1796	1863	1583
Fl _t Permitted	0.95	1.00		0.76	1.00	1.00
Satd. Flow (perm)	1770	1583		1425	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	151	130	45	87	127
RTOR Reduction (vph)	0	122	0	0	0	61
Lane Group Flow (vph)	51	29	0	175	87	66
Turn Type	NA	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	5.3	5.3		14.2	14.2	14.2
Effective Green, g (s)	5.3	5.3		14.2	14.2	14.2
Actuated g/C Ratio	0.19	0.19		0.52	0.52	0.52
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	341	305		735	961	817
v/s Ratio Prot	c0.03				0.05	
v/s Ratio Perm		0.02		c0.12		0.04
v/c Ratio	0.15	0.10		0.24	0.09	0.08
Uniform Delay, d ₁	9.2	9.1		3.7	3.4	3.4
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d ₂	0.2	0.1		0.2	0.0	0.0
Delay (s)	9.4	9.3		3.8	3.4	3.4
Level of Service	A	A		A	A	A
Approach Delay (s)	9.3			3.8	3.4	
Approach LOS	A			A	A	

Intersection Summary

HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	27.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	179	217	209	120	101	99
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	179	217	209	120	101	99
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total (vph)	179	217	329	101	99	
Volume Left (vph)	179	0	209	0	0	
Volume Right (vph)	0	217	0	0	99	
Hadj (s)	0.53	-0.67	0.16	0.03	-0.67	
Departure Headway (s)	6.5	5.3	5.8	6.1	5.4	
Degree Utilization, x	0.32	0.32	0.53	0.17	0.15	
Capacity (veh/h)	527	645	592	555	625	
Control Delay (s)	11.4	9.6	15.2	9.2	8.2	
Approach Delay (s)	10.4		15.2	8.7		
Approach LOS	B		C	A		
Intersection Summary						
Delay			11.7			
Level of Service			B			
Intersection Capacity Utilization			41.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis
 17: Webster Street & 1st Street / Embarcadero

12/11/2013



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	179	217	209	120	101	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.97	1.00	1.00
Satd. Flow (prot)	1770	1583		1805	1863	1583
Flt Permitted	0.95	1.00		0.76	1.00	1.00
Satd. Flow (perm)	1770	1583		1420	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	179	217	209	120	101	99
RTOR Reduction (vph)	0	174	0	0	0	35
Lane Group Flow (vph)	179	43	0	329	101	64
Turn Type	NA	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	10.5	10.5		34.2	34.2	34.2
Effective Green, g (s)	10.5	10.5		34.2	34.2	34.2
Actuated g/C Ratio	0.20	0.20		0.65	0.65	0.65
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	352	315		921	1209	1027
v/s Ratio Prot	c0.10				0.05	
v/s Ratio Perm		0.03		c0.23		0.04
v/c Ratio	0.51	0.14		0.36	0.08	0.06
Uniform Delay, d1	18.8	17.4		4.2	3.4	3.4
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.2		1.1	0.1	0.1
Delay (s)	20.0	17.6		5.3	3.6	3.5
Level of Service	B	B		A	A	A
Approach Delay (s)	18.7			5.3	3.5	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



















Level Of Service Computation Report

Cumulative plus Project (Maximum Residential Scenario) Conditions
AM and PM Peak Hours

MITIGATED INTERSECTIONS



















HCM Signalized Intersection Capacity Analysis

25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	197	0	79	2	0	0	382	579	0	0	325	164
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	
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95			0.95	
Frt	1.00		0.85		1.00		1.00	1.00			0.95	
Flt Protected	0.95		1.00		0.95		0.95	1.00			1.00	
Satd. Flow (prot)	1770		1583		1770		1770	3539			3361	
Flt Permitted	0.76		1.00		0.95		0.47	1.00			1.00	
Satd. Flow (perm)	1409		1583		1770		882	3539			3361	
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
Adj. Flow (vph)	197	0	79	2	0	0	382	579	0	0	325	164
RTOR Reduction (vph)	0	0	63	0	0	0	0	0	0	0	59	0
Lane Group Flow (vph)	197	0	16	0	2	0	382	579	0	0	430	0
Turn Type	custom		custom	Perm	NA		Perm	NA			NA	
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					
Actuated Green, G (s)	9.8		9.8		9.8		31.8	31.8			31.8	
Effective Green, g (s)	9.8		9.8		9.8		31.8	31.8			31.8	
Actuated g/C Ratio	0.20		0.20		0.20		0.64	0.64			0.64	
Clearance Time (s)	4.0		4.0		4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	278		312		349		565	2268			2154	
v/s Ratio Prot								0.16			0.13	
v/s Ratio Perm	c0.14		0.01		0.00		c0.43					
v/c Ratio	0.71		0.05		0.01		0.68	0.26			0.20	
Uniform Delay, d1	18.6		16.1		16.0		5.6	3.8			3.7	
Progression Factor	1.00		1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	8.0		0.1		0.0		3.2	0.1			0.0	
Delay (s)	26.6		16.2		16.0		8.8	3.9			3.7	
Level of Service	C		B		B		A	A			A	
Approach Delay (s)		23.6			16.0			5.9			3.7	
Approach LOS		C			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.1									A
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			49.6							8.0		
Intersection Capacity Utilization			55.6%									B
Analysis Period (min)			15									
c	Critical Lane Group											


















HCM Signalized Intersection Capacity Analysis

25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	209	0	76	5	0	1	273	679	0	0	736	290
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	
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95			0.95	
Frt	1.00		0.85		0.98		1.00	1.00			0.96	
Flt Protected	0.95		1.00		0.96		0.95	1.00			1.00	
Satd. Flow (prot)	1770		1583		1748		1770	3539			3389	
Flt Permitted	0.75		1.00		0.96		0.24	1.00			1.00	
Satd. Flow (perm)	1404		1583		1748		454	3539			3389	
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
Adj. Flow (vph)	209	0	76	5	0	1	273	679	0	0	736	290
RTOR Reduction (vph)	0	0	60	0	5	0	0	0	0	0	61	0
Lane Group Flow (vph)	209	0	16	0	1	0	273	679	0	0	965	0
Turn Type	custom		custom	Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases	4		4	8			2					
Actuated Green, G (s)	13.2		13.2		13.2		39.7	39.7			39.7	
Effective Green, g (s)	13.2		13.2		13.2		39.7	39.7			39.7	
Actuated g/C Ratio	0.22		0.22		0.22		0.65	0.65			0.65	
Clearance Time (s)	4.0		4.0		4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	304		343		378		295	2307			2209	
v/s Ratio Prot								0.19			0.28	
v/s Ratio Perm	c0.15		0.01		0.00		c0.60					
v/c Ratio	0.69		0.05		0.00		0.93	0.29			0.44	
Uniform Delay, d1	22.0		18.9		18.7		9.3	4.6			5.2	
Progression Factor	1.00		1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	6.3		0.1		0.0		33.2	0.1			0.1	
Delay (s)	28.3		18.9		18.7		42.5	4.6			5.3	
Level of Service	C		B		B		D	A			A	
Approach Delay (s)		25.8			18.7			15.5			5.3	
Approach LOS		C			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.2								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			60.9								Sum of lost time (s)	8.0
Intersection Capacity Utilization			67.6%								ICU Level of Service	C
Analysis Period (min)			15									
c	Critical Lane Group											


















HCM Signalized Intersection Capacity Analysis

30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	431	19	20	649	436	75	45	56	390	16	137
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	
Lane Util. Factor		0.95			0.95	1.00		1.00			1.00	
Frt		0.99			1.00	0.85		0.96			0.97	
Flt Protected		0.99			1.00	1.00		0.98			0.97	
Satd. Flow (prot)		3496			3534	1583		1746			1737	
Flt Permitted		0.81			0.93	1.00		0.75			0.71	
Satd. Flow (perm)		2842			3307	1583		1332			1278	
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
Adj. Flow (vph)	70	431	19	20	649	436	75	45	56	390	16	137
RTOR Reduction (vph)	0	5	0	0	0	273	0	26	0	0	19	0
Lane Group Flow (vph)	0	515	0	0	669	164	0	150	0	0	524	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		19.8			19.8	19.8		25.0			25.0	
Effective Green, g (s)		19.8			19.8	19.8		25.0			25.0	
Actuated g/C Ratio		0.38			0.38	0.38		0.47			0.47	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		1065			1240	593		630			605	
v/s Ratio Prot												
v/s Ratio Perm		0.18			c0.20	0.10		0.11			c0.41	
v/c Ratio		0.48			0.54	0.28		0.24			0.87	
Uniform Delay, d1		12.6			12.9	11.5		8.2			12.4	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		0.3			0.5	0.3		0.2			12.4	
Delay (s)		12.9			13.4	11.8		8.4			24.8	
Level of Service		B			B	B		A			C	
Approach Delay (s)		12.9			12.7			8.4			24.8	
Approach LOS		B			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			15.3				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			52.8				Sum of lost time (s)		8.0			
Intersection Capacity Utilization			80.5%				ICU Level of Service			D		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

30: 5th Avenue & 1st Street / Embarcadero

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	74	879	57	56	744	623	39	19	27	750	40	97	
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		
Lane Util. Factor		0.95			0.95	1.00		1.00			1.00		
Frt		0.99			1.00	0.85		0.96			0.99		
Flt Protected		1.00			1.00	1.00		0.98			0.96		
Satd. Flow (prot)		3496			3527	1583		1743			1761		
Flt Permitted		0.74			0.71	1.00		0.71			0.71		
Satd. Flow (perm)		2606			2503	1583		1257			1303		
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	
Adj. Flow (vph)	74	879	57	56	744	623	39	19	27	750	40	97	
RTOR Reduction (vph)	0	5	0	0	0	374	0	13	0	0	5	0	
Lane Group Flow (vph)	0	1005	0	0	800	249	0	72	0	0	882	0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA		
Protected Phases		4			8			2			6		
Permitted Phases	4			8		8	2			6			
Actuated Green, G (s)		36.0			36.0	36.0		46.0			46.0		
Effective Green, g (s)		36.0			36.0	36.0		46.0			46.0		
Actuated g/C Ratio		0.40			0.40	0.40		0.51			0.51		
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0		
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0		
Lane Grp Cap (vph)		1042			1001	633		642			665		
v/s Ratio Prot													
v/s Ratio Perm		c0.39			0.32	0.16		0.06			c0.68		
v/c Ratio		0.96			0.80	0.39		0.11			1.33		
Uniform Delay, d1		26.4			23.8	19.2		11.4			22.0		
Progression Factor		1.00			1.00	1.00		1.00			1.00		
Incremental Delay, d2		19.7			4.5	0.4		0.1			157.2		
Delay (s)		46.1			28.4	19.6		11.5			179.2		
Level of Service		D			C	B		B			F		
Approach Delay (s)		46.1			24.5			11.5			179.2		
Approach LOS		D			C			B			F		
Intersection Summary													
HCM 2000 Control Delay			70.9									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.17										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			116.7%									ICU Level of Service	H
Analysis Period (min)			15										
c	Critical Lane Group												

Level Of Service Computation Report

Cumulative plus Project (Maximum Commercial Scenario) Conditions
AM and PM Peak Hours

MITIGATED INTERSECTIONS

HCM Unsignalized Intersection Capacity Analysis

17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	64	184	157	52	77	101
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	64	184	157	52	77	101
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total (vph)	64	184	209	77	101	
Volume Left (vph)	64	0	157	0	0	
Volume Right (vph)	0	184	0	0	101	
Hadj (s)	0.53	-0.67	0.18	0.03	-0.67	
Departure Headway (s)	6.0	4.8	5.3	5.4	4.7	
Degree Utilization, x	0.11	0.25	0.31	0.12	0.13	
Capacity (veh/h)	564	705	649	629	722	
Control Delay (s)	8.5	8.2	10.7	7.9	7.2	
Approach Delay (s)	8.3		10.7	7.5		
Approach LOS	A		B	A		
Intersection Summary						
Delay			8.9			
Level of Service			A			
Intersection Capacity Utilization			28.3%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

17: Webster Street & 1st Street / Embarcadero

12/11/2013



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	64	184	157	52	77	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.96	1.00	1.00
Satd. Flow (prot)	1770	1583		1795	1863	1583
Flt Permitted	0.95	1.00		0.75	1.00	1.00
Satd. Flow (perm)	1770	1583		1405	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	64	184	157	52	77	101
RTOR Reduction (vph)	0	147	0	0	0	50
Lane Group Flow (vph)	64	37	0	209	77	51
Turn Type	NA	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	5.4	5.4		13.5	13.5	13.5
Effective Green, g (s)	5.4	5.4		13.5	13.5	13.5
Actuated g/C Ratio	0.20	0.20		0.50	0.50	0.50
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	355	317		705	934	794
v/s Ratio Prot	c0.04				0.04	
v/s Ratio Perm		0.02		c0.15		0.03
v/c Ratio	0.18	0.12		0.30	0.08	0.06
Uniform Delay, d1	8.9	8.8		3.9	3.5	3.4
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		0.2	0.0	0.0
Delay (s)	9.2	9.0		4.2	3.5	3.5
Level of Service	A	A		A	A	A
Approach Delay (s)	9.0			4.2	3.5	
Approach LOS	A			A	A	

Intersection Summary

HCM 2000 Control Delay	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	26.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 17: Webster Street & 1st Street / Embarcadero



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	170	185	234	134	88	86
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	170	185	234	134	88	86
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2	
Volume Total (vph)	170	185	368	88	86	
Volume Left (vph)	170	0	234	0	0	
Volume Right (vph)	0	185	0	0	86	
Hadj (s)	0.53	-0.67	0.16	0.03	-0.67	
Departure Headway (s)	6.5	5.3	5.7	6.1	5.3	
Degree Utilization, x	0.31	0.27	0.58	0.15	0.13	
Capacity (veh/h)	524	639	608	560	631	
Control Delay (s)	11.2	9.1	16.3	8.9	7.9	
Approach Delay (s)	10.1		16.3	8.4		
Approach LOS	B		C	A		
Intersection Summary						
Delay			12.3			
Level of Service			B			
Intersection Capacity Utilization			42.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

17: Webster Street & 1st Street / Embarcadero

12/11/2013

























Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	170	185	234	134	88	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.97	1.00	1.00
Satd. Flow (prot)	1770	1583		1805	1863	1583
Flt Permitted	0.95	1.00		0.76	1.00	1.00
Satd. Flow (perm)	1770	1583		1424	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	185	234	134	88	86
RTOR Reduction (vph)	0	150	0	0	0	29
Lane Group Flow (vph)	170	35	0	368	88	57
Turn Type	NA	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	10.4	10.4		35.9	35.9	35.9
Effective Green, g (s)	10.4	10.4		35.9	35.9	35.9
Actuated g/C Ratio	0.19	0.19		0.66	0.66	0.66
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	339	303		941	1231	1046
v/s Ratio Prot	c0.10				0.05	
v/s Ratio Perm		0.02		c0.26		0.04
v/c Ratio	0.50	0.12		0.39	0.07	0.05
Uniform Delay, d1	19.6	18.2		4.2	3.3	3.2
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.2		1.2	0.1	0.1
Delay (s)	20.8	18.3		5.4	3.4	3.3
Level of Service	C	B		A	A	A
Approach Delay (s)	19.5			5.4	3.4	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

25: Oak Street & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	 
Volume (vph)	139	0	75	2	0	0	396	579	0	0	325	201
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	
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95			0.95	
Frt	1.00		0.85		1.00		1.00	1.00			0.94	
Flt Protected	0.95		1.00		0.95		0.95	1.00			1.00	
Satd. Flow (prot)	1770		1583		1770		1770	3539			3336	
Flt Permitted	0.76		1.00		0.95		0.46	1.00			1.00	
Satd. Flow (perm)	1409		1583		1770		851	3539			3336	
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
Adj. Flow (vph)	139	0	75	2	0	0	396	579	0	0	325	201
RTOR Reduction (vph)	0	0	62	0	0	0	0	0	0	0	66	0
Lane Group Flow (vph)	139	0	13	0	2	0	396	579	0	0	460	0
Turn Type	custom		custom	Perm	NA		Perm	NA			NA	
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					
Actuated Green, G (s)	8.6		8.6		8.6		33.9	33.9			33.9	
Effective Green, g (s)	8.6		8.6		8.6		33.9	33.9			33.9	
Actuated g/C Ratio	0.17		0.17		0.17		0.67	0.67			0.67	
Clearance Time (s)	4.0		4.0		4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	239		269		301		571	2375			2239	
v/s Ratio Prot								0.16			0.14	
v/s Ratio Perm	c0.10		0.01		0.00		c0.47					
v/c Ratio	0.58		0.05		0.01		0.69	0.24			0.21	
Uniform Delay, d1	19.3		17.5		17.4		5.1	3.3			3.2	
Progression Factor	1.00		1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	3.6		0.1		0.0		3.6	0.1			0.0	
Delay (s)	22.9		17.6		17.4		8.7	3.3			3.2	
Level of Service	C		B		B		A	A			A	
Approach Delay (s)		21.0			17.4			5.5			3.2	
Approach LOS		C			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			6.8								HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			50.5								Sum of lost time (s)	8.0
Intersection Capacity Utilization			54.6%								ICU Level of Service	A
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

25: Oak Street & 1st Street / Embarcadero




















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	230	0	83	5	0	1	263	679	0	0	736	251
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	
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95			0.95	
Frt	1.00		0.85		0.98		1.00	1.00			0.96	
Flt Protected	0.95		1.00		0.96		0.95	1.00			1.00	
Satd. Flow (prot)	1770		1583		1748		1770	3539			3404	
Flt Permitted	0.75		1.00		0.96		0.25	1.00			1.00	
Satd. Flow (perm)	1404		1583		1748		474	3539			3404	
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
Adj. Flow (vph)	230	0	83	5	0	1	263	679	0	0	736	251
RTOR Reduction (vph)	0	0	64	0	5	0	0	0	0	0	50	0
Lane Group Flow (vph)	230	0	19	0	1	0	263	679	0	0	937	0
Turn Type	custom		custom	Perm	NA		Perm	NA			NA	
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					
Actuated Green, G (s)	13.7		13.7		13.7		38.8	38.8				38.8
Effective Green, g (s)	13.7		13.7		13.7		38.8	38.8				38.8
Actuated g/C Ratio	0.23		0.23		0.23		0.64	0.64				0.64
Clearance Time (s)	4.0		4.0		4.0		4.0	4.0				4.0
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	317		358		395		303	2269				2183
v/s Ratio Prot								0.19				0.28
v/s Ratio Perm	c0.16		0.01		0.00		c0.56					
v/c Ratio	0.73		0.05		0.00		0.87	0.30				0.43
Uniform Delay, d1	21.7		18.3		18.1		8.8	4.8				5.4
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.00
Incremental Delay, d2	8.0		0.1		0.0		22.1	0.1				0.1
Delay (s)	29.7		18.4		18.1		30.9	4.9				5.5
Level of Service	C		B		B		C	A				A
Approach Delay (s)		26.7			18.1			12.1				5.5
Approach LOS		C			B			B				A

Intersection Summary

HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			


















HCM Signalized Intersection Capacity Analysis

30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	426	19	20	664	436	75	45	56	390	16	137
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	
Lane Util. Factor		0.95			0.95	1.00		1.00			1.00	
Frt		0.99			1.00	0.85		0.96			0.97	
Flt Protected		0.99			1.00	1.00		0.98			0.97	
Satd. Flow (prot)		3496			3534	1583		1746			1737	
Flt Permitted		0.76			0.93	1.00		0.73			0.70	
Satd. Flow (perm)		2672			3306	1583		1297			1264	
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
Adj. Flow (vph)	70	426	19	20	664	436	75	45	56	390	16	137
RTOR Reduction (vph)	0	3	0	0	0	284	0	22	0	0	16	0
Lane Group Flow (vph)	0	512	0	0	684	152	0	154	0	0	527	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		22.0			22.0	22.0		33.2			33.2	
Effective Green, g (s)		22.0			22.0	22.0		33.2			33.2	
Actuated g/C Ratio		0.35			0.35	0.35		0.53			0.53	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		930			1150	551		681			664	
v/s Ratio Prot												
v/s Ratio Perm		0.19			c0.21	0.10		0.12			c0.42	
v/c Ratio		0.55			0.59	0.28		0.23			0.79	
Uniform Delay, d1		16.6			16.9	14.9		8.1			12.2	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		0.7			0.8	0.3		0.2			6.5	
Delay (s)		17.3			17.8	15.1		8.2			18.7	
Level of Service		B			B	B		A			B	
Approach Delay (s)		17.3			16.7			8.2			18.7	
Approach LOS		B			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			16.7				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			63.2				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			80.8%				ICU Level of Service				D	
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

30: 5th Avenue & 1st Street / Embarcadero

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	885	57	56	734	623	39	19	27	750	40	97
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	
Lane Util. Factor		0.95			0.95	1.00		1.00			1.00	
Frt		0.99			1.00	0.85		0.96			0.99	
Flt Protected		1.00			1.00	1.00		0.98			0.96	
Satd. Flow (prot)		3497			3527	1583		1743			1761	
Flt Permitted		0.75			0.70	1.00		0.71			0.71	
Satd. Flow (perm)		2622			2492	1583		1257			1303	
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
Adj. Flow (vph)	74	885	57	56	734	623	39	19	27	750	40	97
RTOR Reduction (vph)	0	5	0	0	0	374	0	13	0	0	5	0
Lane Group Flow (vph)	0	1011	0	0	790	249	0	72	0	0	882	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		36.0			36.0	36.0		46.0			46.0	
Effective Green, g (s)		36.0			36.0	36.0		46.0			46.0	
Actuated g/C Ratio		0.40			0.40	0.40		0.51			0.51	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		1048			996	633		642			665	
v/s Ratio Prot												
v/s Ratio Perm		c0.39			0.32	0.16		0.06			c0.68	
v/c Ratio		0.96			0.79	0.39		0.11			1.33	
Uniform Delay, d1		26.4			23.7	19.2		11.4			22.0	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		19.7			4.4	0.4		0.1			157.2	
Delay (s)		46.1			28.1	19.6		11.5			179.2	
Level of Service		D			C	B		B			F	
Approach Delay (s)		46.1			24.4			11.5			179.2	
Approach LOS		D			C			B			F	
Intersection Summary												
HCM 2000 Control Delay			70.9				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.17									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		8.0			
Intersection Capacity Utilization			116.6%				ICU Level of Service			H		
Analysis Period (min)			15									
c	Critical Lane Group											

Memorandum

Date	July 12, 2013	Page	1 of 10
To	Catherine Payne, City of Oakland Jamie Parks, City of Oakland Iris Starr, City of Oakland		
From	Bill Burton, PE Ryan Niblock		
Subject	Jack London Square Redevelopment Project Update Traffic Volumes and Trip Generation Calculations		

This memorandum has been prepared to compare data provided in the 2004 Jack London Square Redevelopment Project Final Environmental Impact Report (FEIR) with current information and methodologies intended for use to analyze transportation and circulation impacts of the 2013 Project. This memo was requested by the City of Oakland, and its purpose is to detail establish baseline assumptions that will be used in completing the Jack London Square Redevelopment Project Update transportation analyses. Specifically, intersection traffic volumes and trip generation characteristics are examined.

Intersection Turning Movement Volume Comparison

As part of the FEIR traffic analysis, intersection turning movement counts were collected at 32 study intersections during the weekday AM and PM peak hours, between the years 1999 and 2002. These intersections were:

- | | |
|---|---|
| 1. Market Street / 3 rd Street; | 17. Webster Street / Embarcadero; |
| 2. Market Street / 5 th Street; | 18. Harrison Street / 7 th Street; |
| 3. Market Street / 6 th Street; | 19. Jackson Street / 5 th Street; |
| 4. Market Street / 7 th Street; | 20. Jackson Street / 6 th Street; |
| 5. Castro Street / 11 th Street; | 21. Jackson Street / 7 th Street; |
| 6. Castro Street / 12 th Street; | 22. Madison Street / 5 th Street; |
| 7. Broadway / Embarcadero; | 23. Madison Street / 6 th Street; |
| 8. Broadway / 2 nd Street; | 24. Madison Street / 7 th Street; |
| 9. Broadway / 3 rd Street; | 25. Oak Street / Embarcadero; |
| 10. Broadway / 5 th Street; | 26. Oak Street / 3 rd Street; |
| 11. Broadway / 6 th Street; | 27. Oak Street / 5 th Street; |
| 12. Broadway / 11 th Street; | 28. Oak Street / 6 th Street; |
| 13. Broadway / 12 th Street; | 29. Oak Street / 7 th Street; |
| 14. Broadway / 14 th Street; | 30. 5th Avenue / Embarcadero; |
| 15. Franklin Street / 2 nd Street; | 31. Webster Street / Atlantic Avenue (Alameda); and |
| 16. Franklin Street / 3 rd Street; | 32. Constitution Way / Atlantic Avenue (Alameda). |

Intersection turning movement volumes were collected at half of these intersections on Tuesday, January 15, 2013, and the remainder were collected on Thursday, February 14, 2013. These 2013 total intersection volumes are compared with total intersection traffic volumes as evaluated in the FEIR in **Table 1**. As shown, since the time of FEIR data collection (between the years 1999 and 2002), 29 of the 32 intersections experienced decreases in traffic volumes during both peak hours. The Oak Street / 3rd

Street intersection experienced an increase in traffic volume during the weekday AM peak hour, and a decrease during the weekday PM peak hour. The Market Street / 5th Street and the Franklin Street / 3rd Street intersections experienced an increase in traffic volumes during the weekday PM peak hour, and a decrease during the weekday AM peak hour.

Table 1: Existing Conditions Traffic Volume Comparison

Intersection		Intersection Volume Total				Volume Difference			
		FEIR		2013 Count		AM Peak Hour		PM Peak Hour	
		AM	PM	AM	PM	Total	%	Total	%
1	Market St / 3 rd St	863	771	555	665	-308	-36%	-106	-14%
2	Market St / 5 th St	849	981	838	1,011	-11	-1%	30	3%
3	Market St / 6 th St	1,467	1,260	838	691	-629	-43%	-569	-45%
4	Market St / 7 th St	2,046	1,984	1,437	1,745	-609	-30%	-239	-12%
5	Castro St / 11 th St	2,473	2,314	1,479	1,865	-994	-40%	-449	-19%
6	Castro St / 12 th St	1,092	2,858	909	2,341	-183	-17%	-517	-18%
7	Broadway / Embarcadero	502	742	249	330	-253	-50%	-412	-56%
8	Broadway / 2 nd St	527	828	331	666	-196	-37%	-162	-20%
9	Broadway / 3 rd St	772	1,103	503	908	-269	-35%	-195	-18%
10	Broadway / 5 th St	2,417	3,182	1,901	2,715	-516	-21%	-467	-15%
11	Broadway / 6 th St	2,058	2,334	1,732	1,988	-326	-16%	-346	-15%
12	Broadway / 11 th St	1,887	2,681	1,668	2,083	-219	-12%	-598	-22%
13	Broadway / 12 th St	1,820	2,730	1,316	1,990	-504	-28%	-740	-27%
14	Broadway / 14 th St	2,064	2,677	1,644	2,279	-420	-20%	-398	-15%
15	Franklin St / 2 nd St	243	290	133	282	-110	-45%	-8	-3%
16	Franklin St / 3 rd St	166	374	73	519	-93	-56%	145	39%
17	Webster St / Embarcadero	403	486	206	179	-197	-49%	-307	-63%
18	Harrison St / 7 th St	3,435	3,884	1,954	1,844	-1,481	-43%	-2,040	-53%
19	Jackson St / 5 th St	1,886	2,259	1,290	1,585	-596	-32%	-674	-30%
20	Jackson St / 6 th St	3,260	3,402	2,204	1,615	-1,056	-32%	-1,787	-53%
21	Jackson St / 7 th St	2,713	3,167	2,162	1,894	-551	-20%	-1,273	-40%
22	Madison St / 5 th St	1,464	1,804	1,048	1,371	-416	-28%	-433	-24%
23	Madison St / 6 th St	1,209	1,563	984	1,215	-225	-19%	-348	-22%
24	Madison St / 7 th St	1,667	2,256	1,192	1,929	-475	-28%	-327	-14%
25	Oak St / Embarcadero	768	858	672	621	-96	-13%	-237	-28%
26	Oak St / 3 rd St	665	854	666	595	1	0%	-259	-30%
27	Oak St / 5 th St	1,717	2,405	1,252	1,645	-465	-27%	-760	-32%
28	Oak St / 6 th St	1,660	1,519	1,150	1,191	-510	-31%	-328	-22%
29	Oak St / 7 th St	1,776	2,386	1,310	1,858	-466	-26%	-528	-22%
30	5th Ave / Embarcadero	1,279	1,425	1,027	1,227	-252	-20%	-198	-14%
31	Webster St / Atlantic Ave	3,197	2,949	2,466	2,218	-731	-23%	-731	-25%
32	Constitution Way / Atlantic Ave	2,061	2,664	1,961	2,578	-100	-5%	-86	-3%

Source: Jack London Square Redevelopment Project Final Environmental Impact Report, 2004; AECOM 2013.

Notes: Values in **bold** represent volume increases as compared with the FEIR.

Project Description Comparison

Differences in Project land use makeup between the FEIR Project and the 2013 Project as currently proposed are summarized in **Table 2**. As in the FEIR, the transportation study will analyze maximum-build scenarios (that is, a combination of land uses that creates a worst-case impact) in order to allow flexibility among possible site-specific variants. As shown, the Maximum Residential Scenario would substantially reduce the amount of office and retail space provided, eliminate the theater space, and provide 666 residential units. The Maximum Commercial Scenario would replace 55,000 square feet of retail space with 55,000 square feet of office space, as compared with the FEIR Project Description.

Table 2: Project Description Summary

Land Use	FEIR Description		Max Residential Scenario			Max Commercial Scenario		
	Total	Difference	Total	Difference	Total	Difference		
Office	386,300 SF		217,300 SF	-169,000 SF	441,300 SF	+55,000 SF		
Retail	323,400 SF		194,400 SF	-129,000 SF	268,400 SF	-55,000 SF		
Theater	1,700 Se		----	-1,700 Se	1,700 Se	0 Se		
Residential	----		666 DU	+666 DU	----	0 DU		
Hotel	250 Rm		250 Rm	0 Rm	250 Rm	0 Rm		
Conference/Banquet	15,000 SF		15,000 SF	0 SF	15,000 SF	0 SF		

Source: Jack London Square Redevelopment Project Final Environmental Impact Report, 2004; AECOM, 2013.
 Notes: SF = Square Feet, DU = Dwelling Units, Se = Seats, Rm = Rooms.

Trip Generation Comparison

FEIR Trip Generation

Vehicle trip generation totals as analyzed in the FEIR are summarized in **Table 3**. FEIR trip generation estimates were made using a combination of the Institute of Transportation Engineers (ITE) *Trip Generation* (Sixth Edition, 1997), the San Diego Association of Governments (SANDAG) *Traffic Generators* (2002), as well as the findings of the Jack London District Transportation Improvement Study with respect to internal trips and modal split characteristics. As shown in **Table 3**, the Project as analyzed in the FEIR was calculated to generate 20,424 daily vehicle trips, including 1,485 trips during the weekday AM peak hour and 2,550 trips during the weekday PM peak hour.

Table 3: FEIR Vehicle Trip Generation Summary

Land Use ⁽¹⁾	FEIR Project Description		Vehicle Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office	386,300	SF	3,129	700	96	796	126	613	739
Retail	323,400	SF	13,974	264	169	433	584	773	1,357
Theater	1,700	Seats	1,206	9	6	15	108	96	204
Residential	----	----	0	0	0	0	0	0	0
Hotel	250	Rooms	1,646	68	44	112	65	57	122
Conference/Banquet	15,000	SF	468	79	50	129	68	60	128
Total	----	----	20,424	1,120	365	1,485	951	1,599	2,550

Source: Jack London Square Redevelopment Project Final Environmental Impact Report, 2004.

Currently Proposed Project Trip Generation

Trip generation estimates for the 2013 Project analysis are developed from rates given in the ITE *Trip Generation* (Ninth Edition, 2012). Both a weighted average rate and a regression equation with which to calculate trip generation for each land use are provided. Generally, in cases where ITE has surveyed at least 20 sites for a particular land use, where the proposed project is within the range of sizes of the surveyed sites, and where the coefficient of determination¹ is greater or equal to 0.75, the regression equation is used to determine that land use’s trip generation. In cases where ITE studied fewer than 20 sites, the coefficient of determination is less than 0.75, or the project provides a level of land use below a reasonable quantity, the weighted average is used to determine the land use’s trip generation. Using the appropriate trip generation equation or rate, total vehicle trip generation estimates are calculated. The trip generation rates and regression equations used in this analysis are presented in **Table 4**. Trip generation estimates based on ITE values alone are summarized in **Tables 5** and **6**.

¹ The coefficient of determination (R²) is an estimate of the accuracy of the fit of the regression equation.

Table 4: ITE Trip Generation Rates and Regression Equations

Land Use	ITE Land Use Code	Trip Generation Rate or Regression Equation		
		Daily	AM Peak Hour	PM Peak Hour
Office	General Office (710)	$\ln(T) = 0.76 \cdot \ln(X) + 3.68$	$\ln(T) = 0.8 \cdot \ln(X) + 1.57$	$T = 1.12 \cdot (X) + 78.45$
Retail	Shopping Center (820)	$\ln(T) = 0.65 \cdot \ln(X) + 5.83$	$\ln(T) = 0.61 \cdot \ln(X) + 2.24$	$\ln(T) = 0.67 \cdot \ln(X) + 3.31$
Theater	Multiplex Movie Theater (445)	0.8 Trips / Seat	0.1 Trips / Seat	0.08 Trips / Seat
Residential	Apartment (220)*	$T = 6.06 \cdot (X) + 123.56$	$T = 0.49 \cdot (X) + 3.73$	$T = 0.55 \cdot (X) + 17.65$
Hotel	Hotel (310)	$T = 8.95 \cdot (X) - 373.16$	0.53 Trips / Room	0.6 Trips / Room
Conference / Banquet	Quality Restaurant (931)	89.95 Trips / KSF	0.81 Trips / KSF	7.49 Trips / KSF

Source: ITE *Trip Generation* (Ninth Edition, 2012).

Notes: Where regression equations are presented, "T" stands for "Trips," and "X" stands for land use size. The office and retail land uses are evaluated per 1,000 square feet, the residential land use is evaluated per dwelling unit, and the hotel land use is evaluated per room.

* At this time, it has not been determined whether Project residential space will be apartments or condominiums / townhouses. As such, the Apartment land use is used, as it is a larger trip generator, allowing for a conservative analysis of residential trip generation.

Table 5: ITE Vehicle Trip Generation Summary – Max Residential Scenario

Land Use	Current Project Description		Vehicle Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office	217,300	SF	2,368	313	43	356	55	267	322
Retail	194,400	SF	10,461	145	89	234	449	486	935
Theater	----	----	0	0	0	0	0	0	0
Residential	666	DU	4,160	66	264	330	250	134	384
Hotel	250	Rm	1,864	78	55	133	76	74	150
Conference/Banquet	15,000	SF	1,349	6	6	12	75	37	112
Total	----	----	20,202	608	457	1,065	906	998	1,903

Source: AECOM, 2013.

Table 6: ITE Vehicle Trip Generation Summary – Max Commercial Scenario

Land Use	Current Project Description		Vehicle Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office	441,300	SF	4,057	553	75	628	97	476	573
Retail	268,400	SF	12,902	177	108	285	557	604	1,161
Theater	1,700	Seats	1,360	11	6	17	49	87	136
Residential	----	----	0	0	0	0	0	0	0
Hotel	250	Rm	1,864	78	55	133	76	74	150
Conference/Banquet	15,000	SF	1,349	6	6	12	75	37	112
Total	----	----	21,532	825	250	1,075	855	1,278	2,132

Source: AECOM, 2013.

Research has shown that *ITE Trip Generation* over-estimates motor vehicle trips when applied to dense, urban environments such as the Jack London Square neighborhood in Oakland. In fact, *ITE Trip Generation* acknowledges that most of the underlying data for the Handbook were collected in suburban settings with few, if any, alternatives to driving. Moreover, mixed-use developments that combine origins and destinations in close proximity may encourage “internal” trips made entirely within a given development and placing no burden on the external transportation network. For these reasons, the City of Oakland requires that mode split and internal capture are accounted for as part of the trip generation process using factors derived from observed travel data for Alameda County from the Metropolitan Transportation Commission’s (MTC) 2000 Bay Area Travel Survey (BATS). Based on the Project’s location between 0.5 and 1.0 miles of the nearest BART station, appropriate modal split adjustment factors per the 2000 BATS data are applied to the ITE Trip Generation totals. The results of this calculation are provided in **Table 7**.

Table 7: Trip Generation Summary, by Mode

Mode of Travel	Modal Split Adjustment Factors	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<i>Maximum Residential Scenario</i>								
Automobile	0.786	15,880	479	358	837	710	785	1,495
Transit	0.118	2,388	72	54	126	107	118	225
Bike	0.056	1,122	34	25	59	50	56	105
Walk/Other	0.201	4,489	135	101	237	201	222	423
Total Trips	1.161	23,879	720	538	1,258	1,068	1,181	2,248
<i>Maximum Commercial Scenario</i>								
Automobile	0.786	16,926	648	197	845	672	1,003	1,675
Transit	0.118	2,545	97	30	127	101	151	252
Bike	0.056	1,196	46	14	60	47	71	118
Walk/Other	0.201	4,785	183	56	239	190	284	474
Total Trips	1.161	25,602	974	297	1,271	1,010	1,509	2,519

Source: Metropolitan Transportation Commission, 2000 Bay Area Travel Survey, Table K9, Total Trips; AECOM, 2013.

A comparison of vehicle trip generation estimates for the Project as analyzed in the FEIR and the Project as currently proposed is provided in **Table 8**.

Table 8: Vehicle Trip Generation Comparison

Trip Generation Comparison	Vehicle Trip Generation						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
FEIR Vehicle Trip Generation Total	20,424	1,120	365	1,485	951	1,599	2,550
Max Residential Scenario Vehicle Trips	15,880	479	358	837	710	785	1,495
Difference	-4,544	-641	-7	-648	-241	-814	-1,055
FEIR Vehicle Trip Generation Total	20,424	1,120	365	1,485	951	1,599	2,550
Max Commercial Scenario Vehicle Trips	16,926	648	197	845	672	1,003	1,675
Difference	-3,498	-472	-168	-640	-279	-596	-875

Source: Jack London Square Redevelopment Project Final Environmental Impact Report, 2004; AECOM 2013.

As shown, due to changes in the land use totals as well as changes in methodology, both the Maximum Residential Project Scenario and the Maximum Commercial Project Scenario would generate fewer vehicle trips over the course of the day as compared with the Project as analyzed in the FEIR.

Currently Proposed Project Trip Generation, Accounting for Active Uses

Since the completion of the FEIR, some portions of the Project have been constructed and are active uses. Trips associated with these uses are accounted for in existing turning movement counts collected in 2013. Thus, trip generation calculations for the proposed Maximum Residential Project Scenario and the Maximum Commercial Project Scenario must subtract out square footage associated with any currently active uses. A summary of the proposed Project, less active components, is provided in **Table 9**.

Table 9: Project Description Summary, Less Active Components

Land Use	Project as Proposed in FEIR		Max Residential Scenario		Max Commercial Scenario	
	Total	Active Components ⁽¹⁾	Total	Less Active Components ⁽²⁾	Total	Less Active Components ⁽²⁾
Office	386,300 SF	111,000 SF	217,300 SF	106,300 SF	441,300 SF	330,300 SF
Retail	323,400 SF	4,000 SF	194,400 SF	190,400 SF	268,400 SF	264,400 SF
Theater	1,700 Se	-- --	-- --	-- --	1,700 Se	1,700 Se
Residential	-- --	-- --	666 DU	666 DU	-- --	-- --
Hotel	250 Rm	-- --	250 Rm	250 Rm	250 Rm	250 Rm
Conference	15,000 SF	-- --	15,000 SF	15,000 SF	15,000 SF	15,000 SF

Source: Jack London Square Redevelopment Project Final Environmental Impact Report, 2004; AECOM 2013.

Notes: SF = Square Feet, DU = Dwelling Units, Rm = Rooms.

⁽¹⁾ "Active Components" are portions of the Project as identified in the FEIR that are built and occupied.

⁽²⁾ Represents the Project alternative as proposed, minus the portions of the Project that were built and occupied.

Trip generation estimates for the Project, accounting for active uses, follows the same methodology laid out in the previous section of this memorandum. First, trip generation estimates using ITE rates are calculated. The results are summarized in **Tables 10** and **11**.

Table 10: ITE Vehicle Trip Generation – Max Residential Scenario, Less Active Components

Land Use	Current Project Description		Vehicle Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office	106,300	SF	1,375	177	24	201	34	164	198
Retail	190,400	SF	10,321	143	88	231	443	479	922
Theater	----	----	0	0	0	0	0	0	0
Residential	666	DU	4,160	66	264	330	250	134	384
Hotel	250	Rm	1,864	78	55	133	76	74	150
Conference/Banquet	15,000	SF	1,349	6	6	12	75	37	112
Total	----	----	19,069	470	437	907	879	888	1,766

Source: AECOM, 2013.

Table 11: ITE Vehicle Trip Generation – Max Commercial Scenario, Less Active Components

Land Use	Current Project Description		Vehicle Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office	330,300	SF	3,255	438	60	498	76	372	448
Retail	264,400	SF	12,776	175	107	282	552	597	1,149
Theater	1,700	Seats	1,360	11	6	17	49	87	136
Residential	----	----	0	0	0	0	0	0	0
Hotel	250	Rm	1,864	78	55	133	76	74	150
Conference/Banquet	15,000	SF	1,349	6	6	12	75	37	112
Total	----	----	20,604	708	234	942	828	1,167	1,995

Source: AECOM, 2013.

Next, the 2000 BATS modal split adjustment factors are applied to the ITE Trip Generation totals. The results of this calculation are provided in **Table 12**. A comparison of vehicle trip generation estimates for the Project as analyzed in the FEIR and the Project as currently proposed (less active components) is provided in **Table 13**. It should be noted that the trip totals presented within **Table 13** correspond to the total number of vehicles to be layered over existing traffic counts in developing Existing plus Project Conditions.

Table 12: Trip Generation Summary, by Mode, Less Active Components

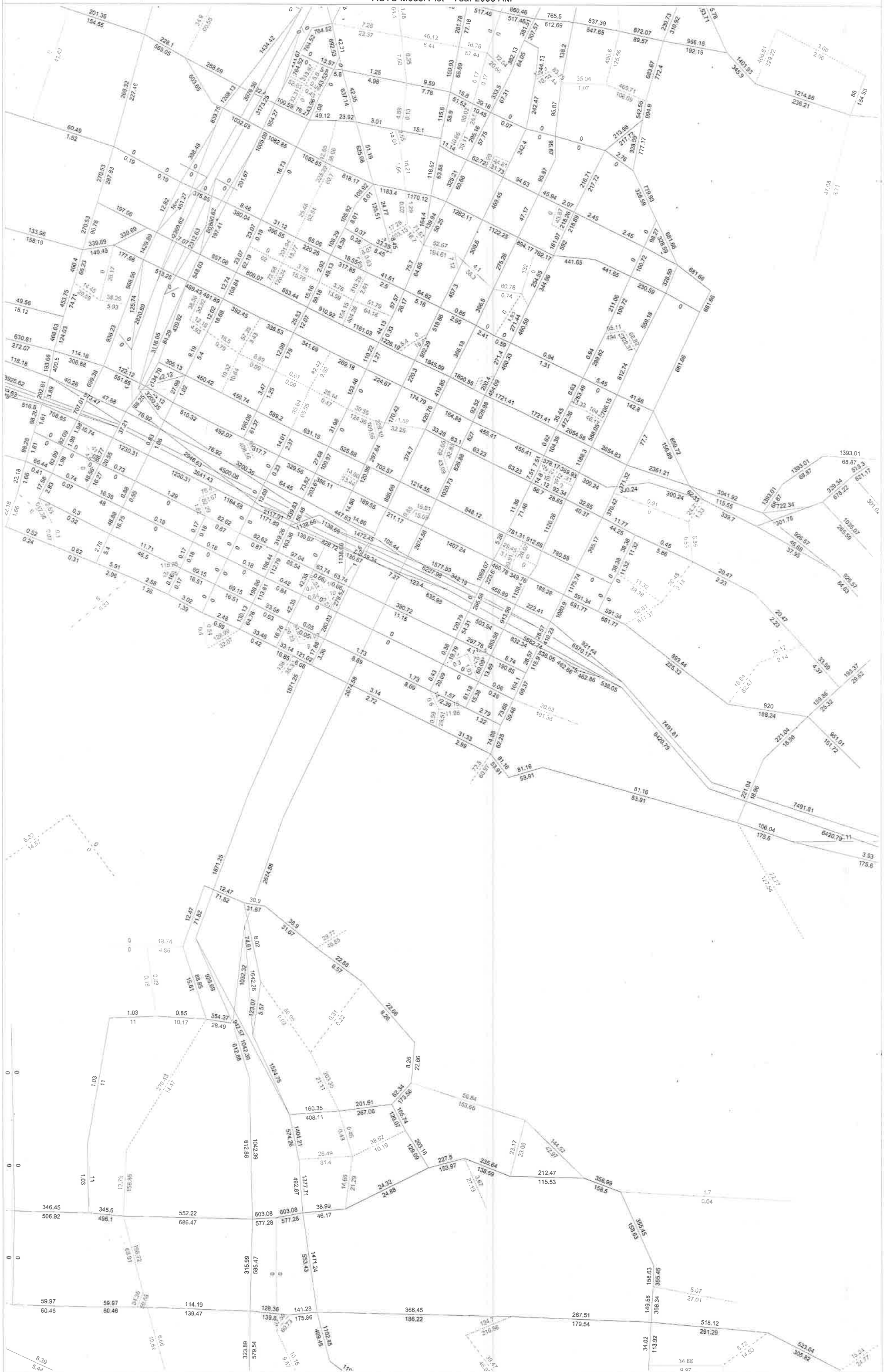
Mode of Travel	Modal Split Adjustment Factors	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<i>Maximum Residential Scenario</i>								
Automobile	0.786	14,989	370	343	713	689	699	1,388
Transit	0.118	2,254	56	52	108	104	105	209
Bike	0.056	1,059	26	24	50	49	49	98
Walk/Other	0.201	4,238	105	97	202	195	198	393
Total Trips	1.161	22,540	557	516	1,073	1,037	1,051	2,088
<i>Maximum Commercial Scenario</i>								
Automobile	0.786	16,197	556	184	740	650	918	1,568
Transit	0.118	2,436	84	28	112	98	138	236
Bike	0.056	1,145	39	13	52	46	65	111
Walk/Other	0.201	4,579	157	52	209	184	259	443
Total Trips	1.161	24,357	836	277	1,113	978	1,380	2,358

Source: AECOM, 2013.

Table 13: Vehicle Trip Generation Comparison

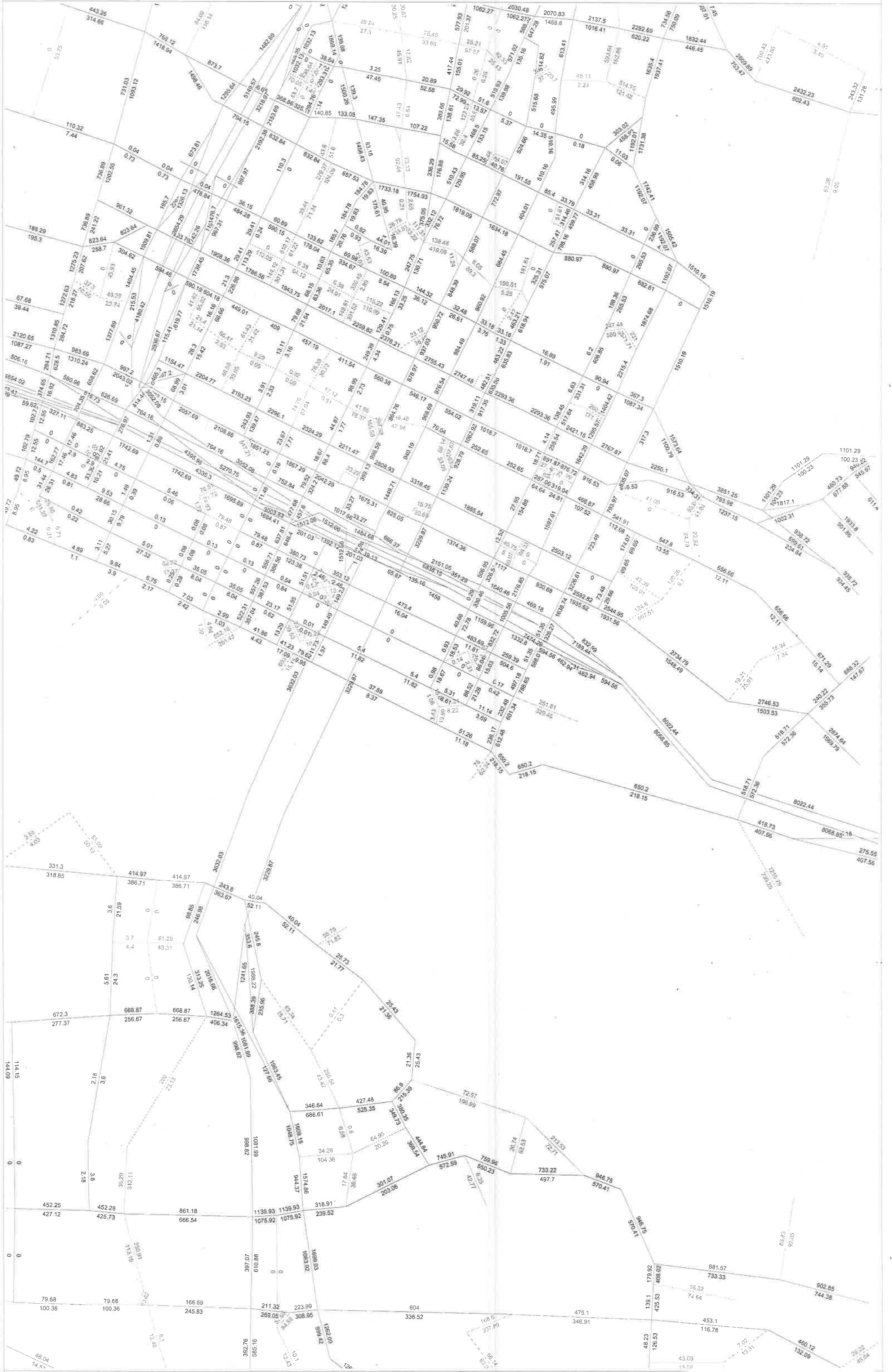
Trip Generation Comparison	Vehicle Trip Generation						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
FEIR Vehicle Trip Generation Total	20,424	1,120	365	1,485	951	1,599	2,550
Max Residential Scenario Vehicle Trips	14,989	370	343	713	689	699	1,388
Difference	-5,435	-750	-22	-772	-262	-900	-1,162
FEIR Vehicle Trip Generation Total	20,424	1,120	365	1,485	951	1,599	2,550
Max Commercial Scenario Vehicle Trips	16,197	556	184	740	650	918	1,568
Difference	-4,227	-564	-181	-745	-301	-681	-982

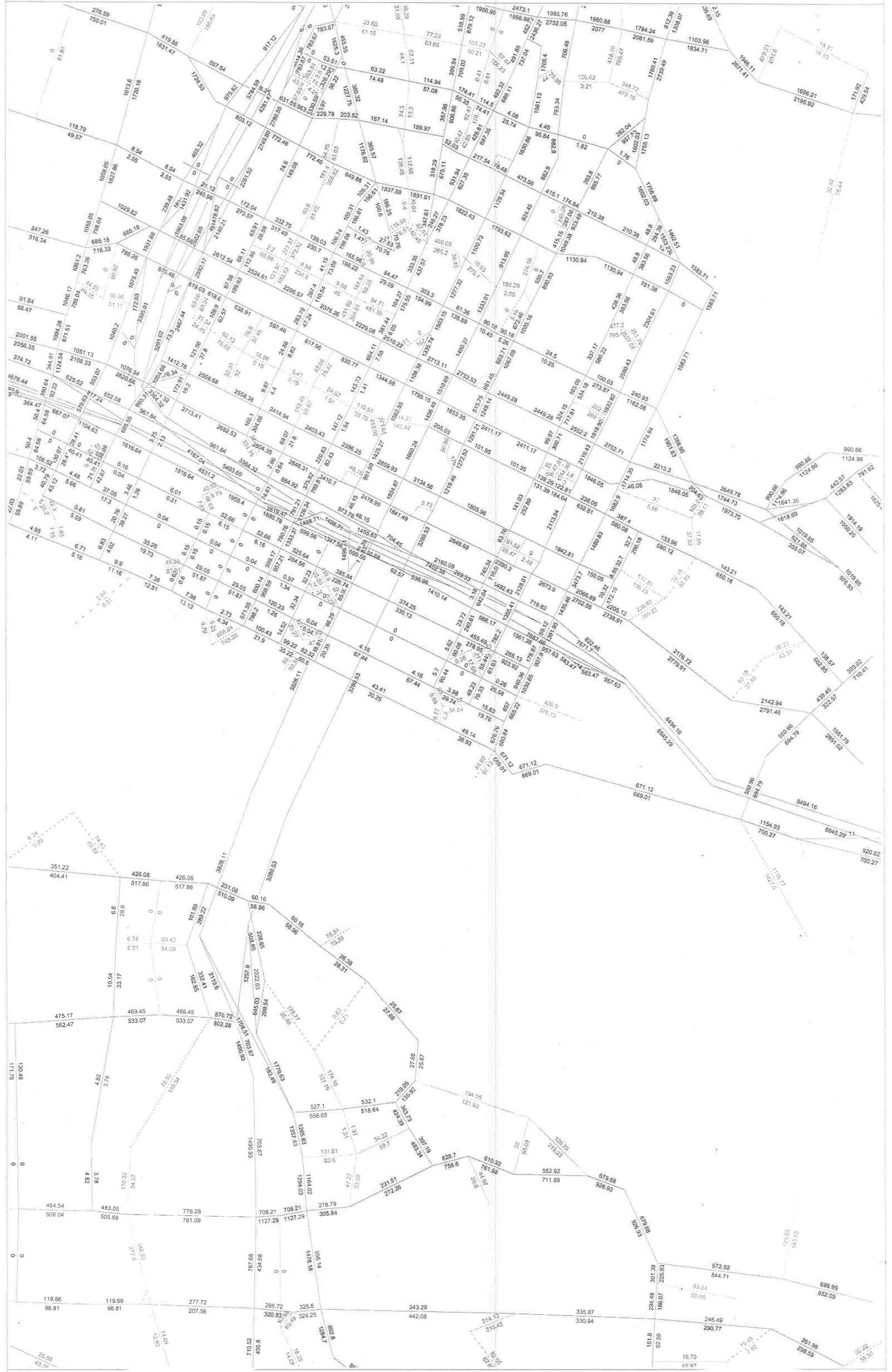
Source: Jack London Square Redevelopment Project Final Environmental Impact Report, 2004; AECOM 2013.



ACTC Model Plot - Year 2005 PM







City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Market St / 3rd St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 10

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2781586	8/21/06	14:19	6	South	Sideswipe	Other Motor Vehicle	North	Making Right Turn	North	Making Right Turn	Improper Turning	0	0
2917411	11/22/06	11:50	46	West	Rear-End	Parked Motor Vehicle	East	Backing	West	Parked	Unsafe Starting or Backing	0	0
3246225	6/29/07	13:59	0	In Int.	Sideswipe	Other Motor Vehicle	Not Stated	Making Right Turn	South	Making Right Turn	Improper Turning	0	0
3259307	7/10/07	10:50	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Making U Turn	Auto R/W Violation	0	0
3600245	2/28/08	6:55	0	In Int.	Sideswipe	Other Motor Vehicle	West	Passing Other Vehicle	West	Making Left Turn	Improper Passing	0	0
3890131	9/20/08	19:30	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4123122	3/2/09	15:05	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Auto R/W Violation	1	0
4313288	6/24/09	8:30	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Auto R/W Violation	1	0
4920192	11/1/10	8:15	0	In Int.	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	West	Making Right Turn	Improper Passing	0	0
5240226	6/28/11	14:00	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Auto R/W Violation	2	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 2

Location: Market St / 3rd St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 10

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
------------	------	------	-------	------	-------------------	--------------------------	---------------------	------------------------	---------------------	------------------------	-----	------	-----

Total Number of Collisions: 10

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	MARKET ST
Cross Street	3RD ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Market St / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 28

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2916370	11/18/06	10:55	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
2916382	11/18/06	11:00	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
2908610	11/27/06	9:20	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	0	0
2946051	12/17/06	12:25	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3029781	1/31/07	16:20	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3126469	3/29/07	22:04	4	Not Stated	Not Stated	Not Stated	South	Proceeding Straight			Improper Turning	0	0
3171894	4/20/07	15:30	0	In Int.	Broadside	Other Motor Vehicle	West	Traveling Wrong Way	North	Proceeding Straight	Auto R/W Violation	0	0
3179790	5/12/07	14:29	0	In Int.	Broadside	Motor Vehicle on Other	South	Proceeding Straight	East	Stopped in Road	Traffic Signals and Signs	0	0
3184236	5/15/07	13:36	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3373814	9/17/07	15:15	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	2	0
3570786	1/18/08	18:14	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Other Improper Driving	0	0
3998700	11/14/08	17:58	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4474835	10/22/09	10:06	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
4511079	11/22/09	2:54	30	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Driving Under Influence	0	0
4527447	12/8/09	11:55	0	In Int.	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Making Left Turn	Unsafe Lane Change	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Market St / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 28

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4666613	4/11/10	16:12	0	In Int.	Head-On	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	1	0
4735940	6/7/10	14:36	0	In Int.	Sideswipe	Other Motor Vehicle	East	Passing Other Vehicle	East	Making Right Turn	Improper Passing	1	0
4845189	8/6/10	19:59	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	0	0
4874530	8/30/10	13:00	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	0	0
4906749	9/20/10	13:04	0	In Int.	Broadside	Not Stated	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	0	0
4899239	10/5/10	8:45	20	West	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Proceeding Straight	Improper Turning	0	0
4949556	10/19/10	10:50	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	0	0
4938387	10/21/10	20:51	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	0	0
5015353	12/28/10	18:46	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	1	0
5205388	5/5/11	17:21	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	1	0
5235576	7/1/11	15:22	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
5214917	7/19/11	18:27	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
5305060	8/26/11	2:52	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	3	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 3

Location: Market St / 5th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 28

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 28

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	MARKET ST
Cross Street	5TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Market St / 6th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 14

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3056524	2/18/07	9:20	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	North	Proceeding Straight	Traffic Signals and Signs	0	0
3283199	7/13/07	17:40	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3514379	12/21/07	8:30	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3546350	12/22/07	22:30	0	In Int.	Hit Object	Fixed Object	South	Proceeding Straight			Hazardous Parking	0	0
3597284	1/25/08	13:59	20	West	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
3545155	1/29/08	14:27	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Unknown	0	0
3685569	4/22/08	12:00	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Left Turn	West	Making Left Turn	Improper Turning	0	0
3743057	5/11/08	15:00	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4208493	4/9/09	16:58	0	In Int.	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4243147	4/27/09	8:23	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	1	0
4375663	8/21/09	13:32	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Left Turn	West	Proceeding Straight	Improper Turning	0	0
4571096	2/23/10	19:36	40	North	Hit Object	Fixed Object	West	Other	South	Parked	Other Improper Driving	1	0
4991474	12/21/10	17:19	50	South	Other	Bicycle	South	Making Right Turn	South	Proceeding Straight	Improper Turning	1	0
5240218	6/24/11	17:36	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Improper Turning	0	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 2

Location: Market St / 6th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 14

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 14

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	MARKET ST
Cross Street	6TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Market St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 27

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
9000286	8/25/06	13:55	0	In Int.	Broadside	Other Motor Vehicle	West	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	0	0
2788597	9/5/06	19:27	0	In Int.	Broadside	Other Motor Vehicle	North	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	0	0
2901436	11/14/06	18:09	0	In Int.	Broadside	Other Motor Vehicle	North	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	2	0
2914077	11/25/06	23:00	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	West	Proceeding Straight	Auto R/W Violation	0	0
3004412	12/9/06	18:54	0	In Int.	Broadside	Other Motor Vehicle	West	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	1	0
3011296	1/24/07	8:30	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Unsafe Lane Change	0	0
3075863	3/1/07	19:20	0	In Int.	Head-On	Other Motor Vehicle	North	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	2	0
3196844	5/30/07	15:50	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3256525	7/6/07	18:50	0	In Int.	Head-On	Other Motor Vehicle	West	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	0	0
3325392	8/8/07	16:59	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
3388683	9/13/07	6:45	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	2	0
3657063	3/20/08	21:49	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	2	0
3743094	5/16/08	20:19	40	North	Sideswipe	Other Motor Vehicle	South	Entering Traffic	South	Proceeding Straight	Unsafe Starting or Backing	0	0
3995908	10/26/08	14:31	0	In Int.	Head-On	Other Motor Vehicle	South	Proceeding Straight	North	Proceeding Straight	Auto R/W Violation	0	0
4148917	3/4/09	19:26	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	West	Proceeding Straight	Unknown	0	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 2

Location: Market St / 7th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 27

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4197149	3/10/09	8:19	0	In Int.	Broadside	Other Motor Vehicle	West	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	0	0
4165528	3/11/09	20:11	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
4257876	5/11/09	13:53	20	North	Sideswipe	Parked Motor Vehicle	South	Other	South	Parked	Improper Turning	0	0
4312297	5/31/09	17:15	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	0	0
4296790	6/19/09	9:50	0	In Int.	Other	Other Motor Vehicle	South	Entering Traffic	South	Proceeding Straight	Improper Turning	0	0
4317138	6/25/09	11:36	0	In Int.	Broadside	Other Motor Vehicle	West	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	0	0
4542980	12/2/09	1:06	0	In Int.	Other	Non-Collision	South	Proceeding Straight			Improper Turning	0	0
4789816	6/14/10	9:30	0	In Int.	Broadside	Other Motor Vehicle	West	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	0	0
4919031	8/17/10	9:05	0	In Int.	Sideswipe	Other Motor Vehicle	West	Changing Lanes	West	Proceeding Straight	Improper Turning	0	0
4886331	9/10/10	19:13	40	North	Sideswipe	Parked Motor Vehicle	South	Proceeding Straight	South	Parked	Other Hazardous Movement	0	0
4875082	9/13/10	8:22	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Improper Turning	0	0
4947775	10/27/10	11:15	12	South	Sideswipe	Other Motor Vehicle	North	Passing Other Vehicle	North	Making Right Turn	Improper Passing	0	0

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Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 3

Location: Market St / 7th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 27

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 27

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	MARKET ST
Cross Street	7TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Castro St / 11th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 29

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2749557	8/1/06	18:40	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	2	0
2759241	8/8/06	10:54	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
2942464	12/7/06	18:05	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Unsafe Speed	0	0
2942469	12/12/06	11:40	0	In Int.	Broadside	Motor Vehicle on Other	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3145344	4/11/07	16:59	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
3197965	5/31/07	13:00	6	East	Other	Bicycle	East	Proceeding Straight	East	Proceeding Straight	Improper Turning	1	0
3250395	7/2/07	9:44	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3315271	8/14/07	20:40	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3624870	2/16/08	8:00	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	North	Making Left Turn	Traffic Signals and Signs	0	0
3610683	2/17/08	17:42	0	In Int.	Vehicle - Pedestrian	Pedestrian	North	Making Left Turn	East	Not Stated	Ped R/W Violation	1	0
3620669	2/19/08	16:10	15	North	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	0	0
3881852	8/17/08	16:45	50	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Other	0	0
3904921	8/28/08	7:00	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Other	1	0
3945876	10/9/08	6:30	0	In Int.	Other	Non-Collision	North	Proceeding Straight			Unsafe Starting or Backing	0	0
4148913	3/4/09	1:31	0	In Int.	Sideswipe	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Castro St / 11th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 29

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4209111	3/30/09	0:14	0	In Int.	Sideswipe	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4208557	4/21/09	15:30	20	West	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Slowing/Stopping	Unsafe Speed	0	0
4271175	5/20/09	6:35	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4317198	6/30/09	11:52	4	South	Rear-End	Other Motor Vehicle	North	Stopped in Road	North	Stopped in Road	Unsafe Starting or Backing	0	0
4543084	12/18/09	10:46	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4633033	2/10/10	16:00	10	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	1	0
4611748	2/26/10	17:33	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	2	0
4687571	3/9/10		0	In Int.	Hit Object	Fixed Object	East	Passing Other Vehicle			Unsafe Speed	0	0
4760137	4/2/10	20:09	15	South	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Driving Under Influence	1	0
4689140	4/21/10	6:55	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
4695275	4/24/10	0:54	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4772417	5/23/10	2:05	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
4972291	11/15/10	20:58	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
5006522	12/19/10	1:50	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	3	0

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Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 3

Location: Castro St / 11th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 29

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 29

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	CASTRO ST
Cross Street	11TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Castro St / 12th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 38

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2798191	9/18/06	9:30	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	North	Making Right Turn	Improper Turning	0	0
2971258	12/16/06	15:00	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Unsafe Lane Change	0	0
3010361	1/14/07	20:50	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
3011300	1/19/07	23:00	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
3092866	3/8/07	11:10	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Auto R/W Violation	0	0
3255844	7/3/07	16:40	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Making Right Turn	Improper Turning	0	0
3283201	7/20/07	10:59	27	West	Broadside	Other Motor Vehicle	West	Making Right Turn	North	Proceeding Straight	Auto R/W Violation	0	0
3283205	7/20/07	14:00	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	West	Making Right Turn	Improper Turning	0	0
3325130	7/28/07	17:10	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Making Right Turn	Improper Turning	0	0
3612458	3/1/08	8:29	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Making Right Turn	Traffic Signals and Signs	1	0
3675724	3/25/08	11:40	0	In Int.	Rear-End	Other Motor Vehicle	West	Proceeding Straight	West	Stopped in Road	Unsafe Speed	0	0
3739616	5/7/08	10:32	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Improper Turning	0	0
3866218	8/2/08	9:40	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
4015557	12/12/08	9:01	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4038335	1/20/09	16:52	0	In Int.	Sideswipe	Other Motor Vehicle	North	Changing Lanes	North	Proceeding Straight	Improper Turning	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Castro St / 12th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 38

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4135496	1/29/09	12:15	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4243951	5/8/09	17:11	0	In Int.	Broadside	Other Motor Vehicle	North	Other Unsafe Turning	West	Proceeding Straight	Traffic Signals and Signs	0	0
4269292	6/3/09	17:15	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Unknown	0	0
4296342	6/8/09	19:50	15	North	Head-On	Fixed Object	West	Proceeding Straight			Improper Turning	0	0
4332038	7/17/09	13:40	0	In Int.	Sideswipe	Other Motor Vehicle	North	Changing Lanes	North	Proceeding Straight	Improper Turning	0	0
4331632	7/23/09	16:50	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Making Right Turn	Improper Turning	0	0
4359878	7/28/09	22:06	0	In Int.	Broadside	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Improper Turning	0	0
4336157	7/29/09	10:45	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Improper Turning	0	0
4370774	8/20/09	17:58	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Making Right Turn	Improper Turning	5	0
4457455	10/21/09	15:35	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	1	0
4489427	10/30/09	16:46	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4454340	10/31/09	9:53	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Unsafe Lane Change	0	0
4485795	11/20/09	9:43	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	1	0
4527451	12/2/09	12:25	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4666581	4/1/10	9:36	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Improper Turning	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 3

Location: Castro St / 12th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 38

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4768924	4/27/10	19:00	0	In Int.	Sideswipe	Not Stated	West	Proceeding Straight	West	Making Right Turn	Improper Turning	0	0
4974516	11/21/10	15:11	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4989577	12/3/10	15:55	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Making Right Turn	Traffic Signals and Signs	0	0
5015433	12/29/10	23:15	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
5226275	5/16/11	23:15	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
5226396	6/1/11	3:35	0	In Int.	Sideswipe	Other Motor Vehicle	North	Making Left Turn	North	Proceeding Straight	Improper Turning	0	0
5288295	7/15/11	22:35	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Making Right Turn	Improper Turning	0	0
5272734	8/22/11	15:40	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	1	0

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Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 4

Location: Castro St / 12th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 38

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 38

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	CASTRO ST
Cross Street	12TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Broadway / Embarcadero West

Date Range Reported: 7/31/2006 - 8/31/2011

Total Number of Collisions: 8

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2841017	10/9/06	12:50	3	West	Vehicle - Pedestrian	Pedestrian	East	Proceeding Straight	North	Proceeding Straight	Ped R/W Violation	1	0
2922010	12/1/06	19:33	0	In Int.	Broadside	Train	East	Making Left Turn			Traffic Signals and Signs	0	0
3042886	2/19/07	9:42	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	0	0
3063625	2/27/07	18:10	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3638697	3/4/08	14:35	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	West	Proceeding Straight	Auto R/W Violation	0	0
3765889	4/21/08	19:01	20	South	Sideswipe	Other Motor Vehicle	South	Entering Traffic	South	Proceeding Straight	Other Improper Driving	0	0
3844577	8/15/08	13:32	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Stopped in Road	Improper Turning	0	0
4130904	2/15/09	12:15	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Auto R/W Violation	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 2

Location: Broadway / Embarcadero West
Date Range Reported: 7/31/2006 - 8/31/2011
Total Number of Collisions: 8

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 8

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	BROADWAY
Cross Street	EMBARCADERO WEST
Starting Date	7/31/2006
Ending Date	8/31/2011
Intersection	Intersection Related

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 1

Location: Broadway / 2nd St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 7

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3442839	10/22/07	19:20	25	West	Other	Parked Motor Vehicle	West	Backing	East	Parked	Unsafe Starting or Backing	0	0
3582839	1/25/08	14:02	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Auto R/W Violation	0	0
3625946	2/13/08	14:24	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Auto R/W Violation	0	0
3720249	4/25/08	19:55	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Making Left Turn	Unknown	0	0
3743088	5/15/08	19:05	0	In Int.	Other	Non-Collision	West	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	1	0
4778298	5/13/10	10:18	0	In Int.	Other	Bicycle	West	Proceeding Straight	North	Proceeding Straight	Auto R/W Violation	2	0
5298070	8/21/11	12:00	0	In Int.	Broadside	Bicycle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	1	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Broadway / 2nd St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 7

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 7

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	BROADWAY
Cross Street	2ND ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Broadway / 3rd St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 10

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
9000282	8/22/06	12:10	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
2879920	11/4/06	13:50	30	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Proceeding Straight	Unsafe Speed	2	0
2986300	12/23/06	0:18	0	In Int.	Head-On	Other Motor Vehicle	East	Making Left Turn	West	Proceeding Straight	Auto R/W Violation	0	0
3184191	5/11/07	20:59	50	East	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Unsafe Speed	0	0
3505540	12/8/07	13:40	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
4001697	11/15/08	19:19	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4042427	1/4/09	1:55	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	West	Proceeding Straight	Auto R/W Violation	0	0
4398105	9/17/09	23:19	15	East	Rear-End	Parked Motor Vehicle	West	Backing	Not Stated	Parked	Unsafe Starting or Backing	0	0
4778294	5/19/10	17:36	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4778274	5/23/10	22:51	50	North	Rear-End	Parked Motor Vehicle	North	Backing	South	Parked	Unsafe Starting or Backing	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 2

**Location: Broadway / 3rd St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 10**

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 10

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	BROADWAY
Cross Street	3RD ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Broadway / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 79

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2759201	8/7/06	10:45	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Unknown	0	0
2762379	8/8/06	22:05	0	In Int.	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	0	0
2798198	9/4/06	1:45	0	In Int.	Broadside	Parked Motor Vehicle	North	Proceeding Straight	Not Stated	Parked	Driving Under Influence	0	0
2797980	9/18/06	13:45	0	In Int.	Broadside	Other Motor Vehicle	Not Stated	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
2864391	10/24/06	13:20	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	2	0
2917423	11/29/06	10:15	32	South	Sideswipe	Parked Motor Vehicle	South	Proceeding Straight	South	Parked	Improper Turning	0	0
2942547	12/7/06	17:40	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Traffic Signals and Signs	0	0
2968618	12/30/06	2:15	0	In Int.	Head-On	Not Stated	North	Ran Off Road	Not Stated	Other	Driving Under Influence	0	0
3002111	1/19/07	15:35	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	East	Making Right Turn	Unknown	0	0
3059087	2/17/07	19:46	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	South	Making Left Turn	Unknown	0	0
3077764	3/11/07	23:20	25	East	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	0	0
3152807	4/21/07	23:37	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	South	Making Left Turn	Improper Turning	0	0
3145339	4/23/07	14:30	50	North	Sideswipe	Other Motor Vehicle	North	Proceeding Straight	North	Proceeding Straight	Improper Turning	0	0
3236439	6/6/07	21:36	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	North	Making Right Turn	Unknown	0	0
3227474	6/14/07	20:45	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Unknown	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Broadway / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 79

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3230664	6/18/07	8:02	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
3240778	6/21/07	12:45	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	South	Making Left Turn	Improper Turning	0	0
3283180	7/20/07	17:23	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	North	Making Right Turn	Auto R/W Violation	0	0
3302877	7/23/07	1:56	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
3284025	7/23/07	20:45	20	North	Other	Other Motor Vehicle	South	Backing	South	Stopped in Road	Unsafe Starting or Backing	0	0
3297075	7/27/07	16:20	0	In Int.	Sideswipe	Other Motor Vehicle	South	Changing Lanes	South	Making Left Turn	Unsafe Lane Change	0	0
3359565	8/30/07	21:25	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Traffic Signals and Signs	0	0
3368904	9/12/07	6:30	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	North	Proceeding Straight	Other	0	0
3403043	10/2/07	11:20	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	East	Making Left Turn	Improper Turning	1	0
3403095	10/2/07	11:45	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	South	Making Right Turn	Unknown	0	0
3403099	10/4/07	17:20	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3376452	10/8/07	13:50	10	North	Sideswipe	Other Motor Vehicle	South	Making Left Turn	South	Stopped in Road	Improper Turning	0	0
3479151	11/10/07	3:15	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Making Left Turn	Traffic Signals and Signs	0	0
3472272	11/16/07	11:55	0	In Int.	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3492570	12/4/07	6:35	0	In Int.	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Slowing/Stopping	Unsafe Speed	0	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 3

Location: Broadway / 5th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 79

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3511789	12/8/07	17:10	15	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Slowing/Stopping	Unsafe Speed	2	0
3518541	12/15/07	2:03	40	North	Sideswipe	Not Stated	South	Changing Lanes	South	Proceeding Straight	Improper Turning	0	0
3511812	12/16/07	20:30	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	North	Making Left Turn	Improper Turning	0	0
3574260	1/2/08	22:00	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Other Hazardous Movement	0	0
3617315	1/6/08	1:10	25	North	Other	Other Motor Vehicle	South	Backing	South	Stopped in Road	Driving Under Influence	0	0
3640352	2/15/08	18:25	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Making Left Turn	Driving Under Influence	1	0
3632387	2/26/08	18:45	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	South	Making Left Turn	Improper Turning	0	0
3656492	3/12/08	10:24	39	South	Vehicle - Pedestrian	Pedestrian	East	Proceeding Straight	North	Proceeding Straight	Pedestrian Violation	1	0
3732558	3/30/08	10:59	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
3694772	4/12/08	7:44	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Unsafe Lane Change	0	0
3721847	4/19/08	19:30	0	In Int.	Broadside	Other Motor Vehicle	North	Making Right Turn	North	Stopped in Road	Improper Turning	0	0
3724392	5/2/08	9:35	20	South	Other	Other Motor Vehicle	South	Backing	Not Stated	Stopped in Road	Unsafe Starting or Backing	0	0
3735865	5/3/08	22:30	0	In Int.	Sideswipe	Other Motor Vehicle	North	Changing Lanes	North	Proceeding Straight	Improper Turning	0	0
3768356	6/3/08	14:24	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Improper Turning	0	0
3840287	8/25/08	14:41	0	In Int.	Sideswipe	Other Motor Vehicle	North	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 4

Location: Broadway / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 79

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3931387	9/17/08	1:05	0	In Int.	Sideswipe	Other Motor Vehicle	East	Merging	East	Proceeding Straight	Improper Turning	0	0
3950043	11/2/08	8:40	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4003982	12/21/08	0:30	20	West	Rear-End	Motor Vehicle on Other	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	0	0
4013980	12/31/08	19:35	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Making Left Turn	Traffic Signals and Signs	0	0
4083021	1/16/09	22:57	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	South	Making Left Turn	Improper Turning	0	0
4133038	2/2/09	16:06	0	In Int.	Overtaken	Not Stated	East	Merging	East	Proceeding Straight	Improper Turning	0	0
4105535	2/5/09	15:07	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	South	Making Left Turn	Improper Turning	0	0
4105531	2/5/09	18:35	0	In Int.	Sideswipe	Other Motor Vehicle	North	Changing Lanes	North	Proceeding Straight	Unsafe Lane Change	0	0
4105555	2/13/09	3:08	0	In Int.	Sideswipe	Motor Vehicle on Other	South	Proceeding Straight	East	Making Left Turn	Improper Turning	0	0
4216378	3/6/09	12:50	0	In Int.	Rear-End	Other Motor Vehicle	North	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
4234692	3/14/09	14:45	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Making Left Turn	Improper Turning	0	0
4209169	4/2/09	10:30	60	West	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	0	0
4190643	4/4/09	21:11	0	In Int.	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	South	Making Left Turn	Improper Turning	0	0
4246478	4/9/09	16:18	0	In Int.	Vehicle - Pedestrian	Pedestrian	North	Making Right Turn	South	Not Stated	Ped R/W Violation	1	0
4271943	6/2/09	13:35	40	East	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Proceeding Straight	Improper Turning	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 5

Location: Broadway / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 79

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4266741	6/9/09	13:23	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Making Left Turn	Improper Turning	0	0
4266737	6/9/09	15:24	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Making Left Turn	Improper Turning	0	0
4345335	8/8/09	1:06	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	South	Making Left Turn	Improper Turning	0	0
4386912	9/2/09	10:33	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Improper Turning	0	0
4398104	9/17/09	12:00	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Unknown	0	0
4420808	9/25/09	23:09	0	In Int.	Rear-End	Other Motor Vehicle	South	Making Left Turn	South	Making Left Turn	Improper Turning	1	0
4444934	11/3/09	10:01	0	In Int.	Sideswipe	Other Motor Vehicle	North	Proceeding Straight	North	Making Right Turn	Improper Passing	0	0
4547439	11/7/09	18:32	0	In Int.	Head-On	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Unknown	1	0
4477053	11/12/09	18:32	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	1	0
4508775	12/7/09	20:01	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Improper Turning	0	0
4529987	12/30/09	11:25	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	North	Proceeding Straight	Traffic Signals and Signs	0	0
4577881	1/23/10	20:35	0	In Int.	Sideswipe	Other Motor Vehicle	South	Other Unsafe Turning	South	Making Left Turn	Improper Turning	0	0
4693012	3/22/10	11:50	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Making Left Turn	Traffic Signals and Signs	0	0
4731873	5/26/10	3:40	0	In Int.	Broadside	Motor Vehicle on Other	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
4868545	8/16/10	19:25	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	East	Making Left Turn	Improper Turning	1	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

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Page 6

Location: Broadway / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 79

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4917332	9/18/10	13:14	0	In Int.	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	South	Making Left Turn	Improper Turning	0	0
4908106	9/24/10	10:39	9	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	0	0
5258167	2/27/11	0:24	30	East	Hit Object	Fixed Object	East	Ran Off Road			Driving Under Influence	0	0
5264455	6/29/11	2:17	15	South	Hit Object	Fixed Object	South	Proceeding Straight			Driving Under Influence	0	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 7

Location: Broadway / 5th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 79

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 79

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	BROADWAY
Cross Street	5TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

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Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Broadway / 6th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 30

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2878186	10/31/06	15:00	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
2903735	11/12/06	4:30	18	East	Head-On	Fixed Object	West	Making Right Turn			Unsafe Speed	0	0
2926180	11/23/06	12:19	9	North	Broadside	Motor Vehicle on Other	South	Making Right Turn	South	Proceeding Straight	Improper Turning	0	0
2942461	12/11/06	9:27	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
2984063	12/31/06	14:49	0	In Int.	Vehicle - Pedestrian	Pedestrian	West	Making Right Turn	South	Not Stated	Ped R/W Violation	1	0
2985761	1/12/07	8:26	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3046186	2/4/07	2:25	0	In Int.	Rear-End	Other Motor Vehicle	West	Stopped in Road	West	Making U Turn	Driving Under Influence	0	0
3042884	2/6/07	7:10	36	South	Hit Object	Fixed Object	South	Making Left Turn			Improper Turning	0	0
3063677	2/23/07	19:09	40	North	Rear-End	Other Motor Vehicle	North	Proceeding Straight	South	Stopped in Road	Unsafe Speed	2	0
3093336	3/11/07	16:30	0	In Int.	Sideswipe	Other Motor Vehicle	South	Changing Lanes	South	Proceeding Straight	Unsafe Lane Change	0	0
3126174	4/9/07	18:17	60	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Proceeding Straight	Unsafe Speed	0	0
3211383	6/7/07	7:00	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	South	Making Left Turn	Improper Turning	0	0
3472374	11/16/07		30	West	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Parked	Improper Turning	0	0
3476319	11/24/07	23:47	1	North	Sideswipe	Other Motor Vehicle	South	Making Right Turn	South	Proceeding Straight	Improper Turning	1	0
3575749	2/22/08	14:30	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Left Turn	West	Making Left Turn	Improper Turning	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Broadway / 6th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 30

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3638636	3/4/08	14:40	0	In Int.	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Proceeding Straight	Unsafe Lane Change	0	0
3765343	5/31/08	9:50	0	In Int.	Sideswipe	Other Motor Vehicle	North	Making U Turn	North	Making U Turn	Unsafe Speed	0	0
3838648	8/26/08	18:50	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	South	Making Left Turn	Improper Turning	0	0
3898625	9/7/08	16:30	20	North	Rear-End	Other Motor Vehicle	North	Merging	North	Stopped in Road	Unsafe Speed	0	0
4165602	2/28/09	16:24	0	In Int.	Broadside	Other Motor Vehicle	West	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	1	0
4283267	5/20/09	18:52	40	South	Sideswipe	Other Motor Vehicle	South	Changing Lanes	South	Proceeding Straight	Unsafe Lane Change	1	0
4312706	6/5/09	16:13	42	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Unsafe Speed	0	0
4296394	6/26/09	23:01	20	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	2	0
4662465	3/1/10	8:56	50	North	Sideswipe	Other Motor Vehicle	South	Changing Lanes	South	Proceeding Straight	Unsafe Lane Change	0	0
4624510	3/2/10	12:28	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4855033	7/24/10	22:46	50	West	Head-On	Parked Motor Vehicle	West	Proceeding Straight	West	Parked	Driving Under Influence	0	0
4933178	10/16/10	15:29	10	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Proceeding Straight	Unsafe Speed	1	0
4968494	11/17/10	21:02	0	In Int.	Broadside	Other Motor Vehicle	South	Making Right Turn	South	Proceeding Straight	Improper Turning	0	0
5219558	6/8/11	11:34	0	In Int.	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Unsafe Speed	0	0
5277382	8/26/11	11:36	100	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Following Too Closely	0	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 3

Location: Broadway / 6th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 30

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 30

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	BROADWAY
Cross Street	6TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Broadway / 11th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 17

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2775954	8/16/06	7:30	38	East	Vehicle - Pedestrian	Pedestrian	South	Proceeding Straight	East	Making Left Turn	Pedestrian Violation	1	0
3587687	1/31/08	10:15	0	In Int.	Broadside	Other Motor Vehicle	North	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
3541717	2/1/08	11:08	19	South	Broadside	Other Motor Vehicle	North	Passing Other Vehicle	North	Proceeding Straight	Improper Passing	0	0
3698709	4/20/08	20:03	60	West	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	1	0
3755449	6/3/08	15:04	100	West	Rear-End	Parked Motor Vehicle	East	Backing	East	Parked	Unsafe Starting or Backing	0	0
3859807	7/30/08	18:59	0	In Int.	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Proceeding Straight	Improper Turning	0	0
4105749	2/3/09	6:03	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	1	0
4117768	2/12/09	11:35	0	In Int.	Other	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Wrong Side of Road	1	0
4366947	8/2/09	14:18	17	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Proceeding Straight	Other Improper Driving	0	0
4404730	9/16/09	7:39	0	In Int.	Vehicle - Pedestrian	Pedestrian	East	Other	North	Proceeding Straight	Pedestrian Violation	0	0
4421188	9/29/09	15:45	50	South	Sideswipe	Other Motor Vehicle	North	Proceeding Straight	North	Slowing/Stopping	Other Improper Driving	0	0
4710303	5/5/10	12:51	35	West	Sideswipe	Other Motor Vehicle	East	Entering Traffic	East	Proceeding Straight	Improper Turning	0	0
4809285	6/8/10	11:50	0	In Int.	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	0	0
4782856	6/11/10	2:50	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	0	0
4936668	10/13/10	14:30	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	East	Proceeding Straight	Traffic Signals and Signs	1	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 2

Location: Broadway / 11th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 17

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
5270025	7/6/11	18:31	0	In Int.	Vehicle - Pedestrian	Pedestrian	East	Entering Traffic	South	Proceeding Straight	Ped R/W Violation	1	0
5254888	7/14/11	13:30	40	South	Vehicle - Pedestrian	Pedestrian	South	Stopped in Road	South	Proceeding Straight	Unsafe Starting or Backing	1	0

Total Number of Collisions: 17

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	BROADWAY
Cross Street	11TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Broadway / 12th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 18

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2834277	8/12/06	16:00	10	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	1	0
2985895	12/13/06	18:00	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3039380	2/14/07	2:03	0	In Int.	Broadside	Motor Vehicle on Other	West	Proceeding Straight	South	Proceeding Straight	Auto R/W Violation	3	0
3049374	2/20/07	16:42	50	East	Sideswipe	Other Motor Vehicle	East	Backing	West	Stopped in Road	Unsafe Starting or Backing	0	0
3472338	11/10/07	11:35	40	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Unsafe Speed	3	0
3543416	12/29/07	7:37	0	In Int.	Vehicle - Pedestrian	Pedestrian	West	Making Left Turn	East	Not Stated	Ped R/W Violation	1	0
3624824	2/19/08	13:05	25	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Starting or Backing	1	0
3640368	2/21/08	19:15	0	In Int.	Rear-End	Other Motor Vehicle	South	Slowing/Stopping	South	Stopped in Road	Unsafe Speed	0	0
3660579	4/8/08	10:37	15	North	Sideswipe	Other Motor Vehicle	North	Proceeding Straight	North	Proceeding Straight	Improper Turning	0	0
3744891	5/24/08	21:35	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4039969	1/15/09	12:18	0	In Int.	Sideswipe	Other Motor Vehicle	East	Changing Lanes	South	Proceeding Straight	Unsafe Lane Change	0	0
4282832	6/10/09	11:10	0	In Int.	Vehicle - Pedestrian	Pedestrian	East	Other	North	Proceeding Straight	Pedestrian Violation	1	0
4340617	6/29/09	11:30	0	In Int.	Sideswipe	Other Motor Vehicle	North	Making Right Turn	North	Making Right Turn	Improper Turning	0	0
4317193	6/30/09	9:30	0	In Int.	Sideswipe	Bicycle	North	Making Left Turn	South	Proceeding Straight	Improper Turning	0	0
4458122	10/16/09	22:28	5	North	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Proceeding Straight	Unsafe Speed	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 2

Location: Broadway / 12th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 18

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4698303	4/30/10	21:13	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
4839583	7/7/10	12:02	0	In Int.	Vehicle - Pedestrian	Pedestrian	West	Making Left Turn	West	Not Stated	Ped R/W Violation	1	0
5266796	6/28/11	16:00	5	South	Vehicle - Pedestrian	Pedestrian	East	Other	North	Proceeding Straight	Pedestrian Violation	1	0

Total Number of Collisions: 18

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	BROADWAY
Cross Street	12TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Broadway / 14th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 32

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2834260	10/9/06	14:53	0	In Int.	Broadside	Other Motor Vehicle	West	Changing Lanes	West	Proceeding Straight	Improper Turning	0	0
2881277	11/7/06	15:45	45	West	Rear-End	Other Motor Vehicle	West	Changing Lanes	West	Stopped in Road	Unknown	0	0
2891445	11/11/06	11:41	0	In Int.	Head-On	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	0	0
3143497	4/20/07	16:29	0	In Int.	Vehicle - Pedestrian	Pedestrian	North	Proceeding Straight	North	Proceeding Straight	Ped R/W Violation	1	0
3240676	6/22/07	17:15	10	West	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Proceeding Straight	Unsafe Lane Change	0	0
3283108	7/21/07	3:11	15	South	Sideswipe	Other Motor Vehicle	Not Stated	Proceeding Straight	North	Proceeding Straight	Improper Turning	0	0
3297023	7/25/07	17:30	15	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Unsafe Speed	0	0
3391463	9/27/07	14:00	20	South	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	South	Proceeding Straight	Unsafe Lane Change	0	0
3415686	10/12/07	16:45	0	In Int.	Other	Other Motor Vehicle	Not Stated	Other	North	Proceeding Straight	Unknown	1	0
3610729	2/28/08	12:18	30	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Unsafe Speed	0	0
3675737	3/31/08	11:37	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	1	0
3698679	4/17/08	7:35	25	East	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Changing Lanes	Unsafe Lane Change	0	0
3769703	5/21/08	9:30	0	In Int.	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Unsafe Speed	0	0
3975214	10/15/08	7:07	0	In Int.	Vehicle - Pedestrian	Pedestrian	West	Not Stated	North	Proceeding Straight	Pedestrian Violation	1	0
3994414	11/14/08	9:05	10	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Unsafe Speed	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Broadway / 14th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 32

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3973615	12/11/08	8:20	20	East	Sideswipe	Parked Motor Vehicle	West	Proceeding Straight	West	Parked	Improper Turning	0	0
4208533	4/2/09	13:15	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Improper Turning	0	0
4402393	9/20/09	11:22	50	North	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	0	0
4505281	12/15/09	9:57	0	In Int.	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Proceeding Straight	Improper Turning	0	0
4602751	2/17/10	12:31	15	North	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Proceeding Straight	Unsafe Speed	0	0
4788234	5/20/10	16:49	10	East	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Proceeding Straight	Improper Turning	0	0
4733643	6/17/10	11:44	50	West	Hit Object	Fixed Object	South	Backing			Unsafe Starting or Backing	0	0
4825800	6/29/10	10:15	0	In Int.	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Making Right Turn	Unsafe Speed	2	0
4854412	8/15/10	18:30	20	North	Rear-End	Not Stated	South	Changing Lanes	South	Stopped in Road	Unsafe Speed	0	0
4949564	10/19/10	7:39	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	2	0
5228414	3/17/11	10:30	0	In Int.	Sideswipe	Other Motor Vehicle	South	Changing Lanes	South	Proceeding Straight	Unsafe Lane Change	0	0
5198687	5/9/11	16:40	0	In Int.	Broadside	Bicycle	South	Making Left Turn	West	Proceeding Straight	Other Hazardous Movement	1	0
5226400	6/13/11	19:49	0	In Int.	Rear-End	Other Motor Vehicle	West	Making Right Turn	West	Stopped in Road	Following Too Closely	1	0
5266740	6/18/11	2:28	3	North	Vehicle - Pedestrian	Pedestrian	West	Making Right Turn	West	Not Stated	Ped R/W Violation	1	0
5214937	7/19/11	14:16	12	South	Sideswipe	Other Motor Vehicle	North	Making Right Turn	North	Stopped in Road	Improper Turning	3	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 3

Location: Broadway / 14th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 32

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
5261336	7/19/11	16:55	50	North	Rear-End	Other Motor Vehicle	North	Changing Lanes	North	Proceeding Straight	Unsafe Lane Change	0	0
5272723	8/5/11	18:36	6	East	Vehicle - Pedestrian	Pedestrian	West	Proceeding Straight	East	Proceeding Straight	Unknown	1	0

Total Number of Collisions: 32

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	BROADWAY
Cross Street	14TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Franklin St / 2nd St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 5

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3002145	1/12/07	8:07	45	North	Vehicle - Pedestrian	Pedestrian	East	Proceeding Straight	Not Stated	Stopped in Road	Other	1	0
3782333	6/16/08	18:39	50	West	Other	Other Motor Vehicle	West	Backing	East	Stopped in Road	Unsafe Starting or Backing	0	0
3933149	10/11/08	17:48	40	East	Rear-End	Parked Motor Vehicle	East	Proceeding Straight	East	Parked	Improper Turning	0	0
3971445	10/27/08	4:50	45	South	Sideswipe	Other Motor Vehicle	Not Stated	Parking Maneuver	Not Stated	Parked	Improper Turning	0	0
3987353	11/4/08	17:30	50	West	Rear-End	Parked Motor Vehicle	West	Entering Traffic	West	Parked	Unsafe Starting or Backing	0	0

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Traffic Engineering Department**

Traffic Collision History Report

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Page 2

Location: Franklin St / 2nd St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 5

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 5

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	FRANKLIN ST
Cross Street	2ND ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Franklin St / 3rd St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 8

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2749537	8/3/06	14:00	25	South	Sideswipe	Parked Motor Vehicle	South	Proceeding Straight	South	Parked	Improper Turning	0	0
2788686	9/11/06	8:14	0	In Int.	Broadside	Other Motor Vehicle	East	Backing	East	Making Right Turn	Other	0	0
3152854	4/20/07	23:53	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Auto R/W Violation	0	0
3472358	11/16/07	8:00	3	South	Rear-End	Parked Motor Vehicle	South	Backing	South	Parked	Improper Turning	0	0
3817144	6/23/08	11:02	15	South	Sideswipe	Other Object	East	Making Right Turn	South	Proceeding Straight	Improper Turning	0	0
4105559	2/13/09	19:42	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4477140	11/7/09	21:55	0	In Int.	Other	Parked Motor Vehicle	East	Backing	West	Parked	Other Improper Driving	0	0
5221108	7/11/11	10:50	0	In Int.	Sideswipe	Other Motor Vehicle	South	Slowing/Stopping	West	Proceeding Straight	Other Improper Driving	1	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 2

Location: Franklin St / 3rd St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 8

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 8

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	FRANKLIN ST
Cross Street	3RD ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 1

Location: Webster St / Embarcadero West
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 3

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2908613	11/22/06	22:04	0	In Int.	Other	Fixed Object	East	Ran Off Road			Unsafe Speed	0	0
3315239	8/14/07	17:55	0	In Int.	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Slowing/Stopping	Unsafe Speed	1	0
3648268	3/7/08	13:36	0	In Int.	Other	Other Object	West	Stopped in Road			Other Improper Driving	0	0

Total Number of Collisions: 3

Settings Used For Query

Parameter

Setting

Street Name	WEBSTER ST
Cross Street	EMBARCADERO WEST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Harrison St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 43

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2798456	9/7/06	8:50	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Other	0	0
2821966	9/30/06	23:36	69	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	0	0
2901424	11/3/06	11:12	30	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Proceeding Straight	Unsafe Speed	0	0
2916327	11/19/06	10:26	0	In Int.	Rear-End	Other Motor Vehicle	East	Making Right Turn	East	Making Right Turn	Following Too Closely	0	0
2908601	11/20/06	16:46	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Unsafe Speed	0	0
2968637	12/28/06	16:15	50	East	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	0	0
3123363	4/6/07	11:00	22	South	Sideswipe	Other Motor Vehicle	North	Making Right Turn	North	Making Right Turn	Improper Turning	0	0
3165842	4/19/07	16:30	20	East	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	0	0
3193791	5/25/07	16:10	0	In Int.	Vehicle - Pedestrian	Pedestrian	East	Proceeding Straight	Not Stated	Not Stated	Other	1	0
3236991	6/18/07	15:14	100	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	1	0
3250375	7/3/07	7:30	42	South	Rear-End	Other Motor Vehicle	North	Making Right Turn	North	Stopped in Road	Unsafe Speed	0	0
3256513	7/9/07	14:30	0	In Int.	Sideswipe	Other Motor Vehicle	North	Making Right Turn	North	Making Right Turn	Improper Turning	0	0
3392367	10/2/07	18:05	30	Not Stated	Sideswipe	Other Motor Vehicle	Not Stated	Backing	East	Proceeding Straight	Unknown	0	0
3698642	4/17/08	10:43	0	In Int.	Sideswipe	Motor Vehicle on Other	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
3699250	4/18/08	14:07	30	West	Rear-End	Other Motor Vehicle	East	Backing	East	Proceeding Straight	Unsafe Starting or Backing	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Harrison St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 43

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3803851	7/15/08	9:50	0	In Int.	Hit Object	Fixed Object	North	Making Right Turn			Improper Turning	0	0
3830993	7/19/08	19:30	30	East	Rear-End	Other Motor Vehicle	East	Merging	East	Stopped in Road	Unsafe Speed	0	0
3860321	7/30/08	15:52	0	In Int.	Rear-End	Other Motor Vehicle	North	Making Right Turn	East	Stopped in Road	Unsafe Speed	0	0
3931687	9/22/08	8:10	70	South	Rear-End	Other Motor Vehicle	North	Changing Lanes	North	Stopped in Road	Unsafe Speed	2	0
3975218	10/28/08	18:56	0	In Int.	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Proceeding Straight	Unsafe Speed	0	0
3998746	12/10/08	18:08	4	North	Rear-End	Other Motor Vehicle	North	Making Right Turn	North	Making Right Turn	Unsafe Speed	0	0
4020530	12/12/08	9:32	10	West	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	0	0
4065807	12/17/08	16:00	0	In Int.	Rear-End	Other Motor Vehicle	North	Making Right Turn	North	Making Right Turn	Unsafe Speed	0	0
4042439	1/7/09	14:57	25	East	Hit Object	Fixed Object	East	Not Stated			Unknown	0	0
4038592	1/22/09	15:45	50	East	Rear-End	Other Motor Vehicle	East	Merging	East	Slowing/Stopping	Unsafe Speed	0	0
4130700	1/30/09	11:19	10	South	Rear-End	Not Stated	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	0	0
4138378	2/20/09	7:06	0	In Int.	Sideswipe	Other Motor Vehicle	East	Merging	East	Proceeding Straight	Unsafe Lane Change	0	0
4136957	2/20/09	15:00	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Changing Lanes	Improper Turning	0	0
4168694	3/13/09	21:50	12	South	Hit Object	Fixed Object	Not Stated	Ran Off Road			Improper Turning	0	0
4340920	7/1/09	18:00	15	South	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 3

Location: Harrison St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 43

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4353647	8/9/09	7:42	15	South	Head-On	Fixed Object	North	Proceeding Straight			Improper Turning	0	0
4404738	9/16/09	17:56	0	In Int.	Rear-End	Other Motor Vehicle	East	Making Right Turn	East	Making Right Turn	Following Too Closely	1	0
4406058	9/24/09	14:17	0	In Int.	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	0	0
4406319	9/25/09	15:30	0	In Int.	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	1	0
4427857	10/1/09	6:10	0	In Int.	Hit Object	Fixed Object	Not Stated	Proceeding Straight			Unsafe Speed	0	0
4430375	10/6/09	21:56	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Driving Under Influence	2	0
4464490	10/20/09	11:36	12	East	Rear-End	Other Motor Vehicle	East	Making Right Turn	East	Proceeding Straight	Unsafe Speed	0	0
4527524	12/18/09	15:30	35	West	Sideswipe	Other Motor Vehicle	East	Entering Traffic	East	Proceeding Straight	Unsafe Starting or Backing	0	0
4691445	3/31/10	18:02	2	South	Vehicle - Pedestrian	Pedestrian	North	Making Right Turn	West	Not Stated	Auto R/W Violation	1	0
4678203	4/14/10	12:42	0	In Int.	Rear-End	Other Motor Vehicle	East	Making Right Turn	East	Making Right Turn	Following Too Closely	0	0
4818213	7/16/10	6:50	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	4	0
4859920	8/23/10	10:20	0	In Int.	Rear-End	Other Motor Vehicle	East	Slowing/Stopping	Not Stated	Backing	Following Too Closely	0	0
4886322	9/5/10	3:25	0	In Int.	Hit Object	Not Stated	East	Ran Off Road			Unsafe Speed	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
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Location: Harrison St / 7th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 43

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 43

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	HARRISON ST
Cross Street	7TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Jackson St / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 23

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2864399	10/24/06	13:40	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
3010325	1/18/07	7:50	0	In Int.	Vehicle - Pedestrian	Pedestrian	East	Making Left Turn	South	Not Stated	Ped R/W Violation	0	0
3184241	5/15/07	13:30	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	Not Stated	Proceeding Straight	Traffic Signals and Signs	1	0
3388599	9/26/07	16:00	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
3524813	1/2/08	11:25	15	West	Sideswipe	Other Motor Vehicle	East	Making Right Turn	East	Proceeding Straight	Unknown	0	0
3918331	9/12/08	9:12	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	2	0
4047616	1/10/09	2:45	5	South	Hit Object	Fixed Object	South	Ran Off Road			Improper Turning	0	0
4182814	3/31/09	14:37	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	0	0
4271790	6/11/09	9:48	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	North	Stopped in Road	Improper Turning	0	0
4332866	7/15/09	20:17	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	West	Proceeding Straight	Improper Turning	0	0
4445851	9/3/09	19:55	31	West	Sideswipe	Parked Motor Vehicle	East	Making Right Turn	East	Parked	Driving Under Influence	0	0
4439477	9/18/09	21:20	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
4477073	11/12/09	10:53	0	In Int.	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Unsafe Speed	0	0
4578359	1/7/10	8:54	0	In Int.	Head-On	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	1	0
4772469	5/10/10	14:32	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	2	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

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Location: Jackson St / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 23

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4778406	6/11/10	8:25	0	In Int.	Vehicle - Pedestrian	Pedestrian	East	Making Left Turn	East	Not Stated	Ped R/W Violation	1	0
4818217	7/16/10	8:37	60	West	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	1	0
4874626	9/5/10	13:11	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
4880496	9/11/10	18:25	50	South	Head-On	Other Motor Vehicle	South	Crossed Into Opposing	North	Proceeding Straight	Unsafe Speed	2	0
4894972	9/22/10	12:25	0	In Int.	Vehicle - Pedestrian	Pedestrian	South	Making Left Turn	North	Proceeding Straight	Ped R/W Violation	1	0
5230397	5/1/11	13:20	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
5253742	6/30/11	9:00	100	West	Rear-End	Other Motor Vehicle	East	Slowing/Stopping	East	Slowing/Stopping	Unsafe Speed	1	0
5298868	8/18/11	12:05	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 3

Location: Jackson St / 5th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 23

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 23

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	JACKSON ST
Cross Street	5TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Jackson St / 6th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 30

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2804367	9/17/06	16:50	0	In Int.	Not Stated	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
2845846	10/13/06	1:00	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
2845916	10/15/06	14:00	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	1	0
3009851	1/3/07	22:55	60	East	Rear-End	Other Motor Vehicle	West	Proceeding Straight	West	Stopped in Road	Unsafe Speed	0	0
3026970	1/30/07	13:49	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
3078715	3/10/07	11:25	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
3092653	3/16/07	18:45	0	In Int.	Sideswipe	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3145287	4/10/07	18:10	0	In Int.	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Unsafe Speed	0	0
3240672	6/18/07	21:15	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3422767	10/13/07	21:14	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	1	0
3490930	11/22/07	8:24	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	1	0
3490958	11/30/07	21:31	0	In Int.	Broadside	Motor Vehicle on Other	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	2	0
3671417	3/21/08	7:09	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3746640	5/17/08	9:11	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
3895365	7/22/08	17:30	0	In Int.	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Other	0	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Jackson St / 6th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 30

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
3850635	7/26/08	9:12	0	In Int.	Broadside	Motor Vehicle on Other	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3953059	10/22/08	9:15	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Passing Other Vehicle	Improper Turning	0	0
4078982	1/18/09	11:50	20	East	Rear-End	Other Motor Vehicle	West	Proceeding Straight	West	Stopped in Road	Unsafe Speed	0	0
4229123	4/2/09	15:50	50	North	Rear-End	Other Motor Vehicle	North	Making Right Turn	North	Proceeding Straight	Unsafe Speed	0	0
4245684	5/10/09	17:00	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4251240	5/17/09	23:04	15	North	Rear-End	Parked Motor Vehicle	South	Making Left Turn	South	Parked	Improper Turning	0	0
4401880	9/21/09	11:40	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
4464963	10/10/09	7:26	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	1	0
4476992	11/24/09	15:36	40	Not Stated	Rear-End	Other Motor Vehicle	West	Proceeding Straight	West	Stopped in Road	Unsafe Speed	0	0
4577853	1/29/10	7:14	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
4839571	7/3/10	19:45	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4826285	7/22/10	12:42	25	East	Rear-End	Other Motor Vehicle	West	Proceeding Straight	West	Slowing/Stopping	Following Too Closely	0	0
4880524	9/17/10	10:34	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	1	0
5295030	2/24/11	13:35	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	1	0
5194059	6/24/11	13:21	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 3

Location: Jackson St / 6th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 30

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 30

Settings Used For Query

Parameter

Setting

Street Name	JACKSON ST
Cross Street	6TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Jackson St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 26

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2916374	11/18/06	10:29	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Making Right Turn	Traffic Signals and Signs	1	0
3025164	1/31/07	7:33	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3249904	6/30/07	23:20	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3284037	7/23/07	9:42	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	1	0
3466433	10/19/07	21:49	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Making Right Turn	Improper Turning	0	0
3463170	11/7/07	17:10	0	In Int.	Broadside	Pedestrian	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
3472280	11/15/07	9:00	20	West	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Proceeding Straight	Unsafe Lane Change	0	0
3743086	5/20/08	12:11	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
3821644	7/10/08	8:09	0	In Int.	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
3893421	9/2/08	9:15	0	In Int.	Vehicle - Pedestrian	Pedestrian	North	Making Left Turn	West	Proceeding Straight	Ped R/W Violation	3	0
3967403	11/20/08	14:04	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
3967398	11/24/08	10:22	0	In Int.	Sideswipe	Other Motor Vehicle	East	Passing Other Vehicle	East	Proceeding Straight	Improper Passing	0	0
4047612	1/3/09	15:21	12	West	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Slowing/Stopping	Unsafe Speed	0	0
4207123	3/31/09	13:10	0	In Int.	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Proceeding Straight	Improper Turning	0	0
4222592	4/25/09	20:57	0	In Int.	Vehicle - Pedestrian	Pedestrian	East	Making Left Turn	North	Not Stated	Ped R/W Violation	1	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Jackson St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 26

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4231053	5/1/09	17:00	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
4243796	5/5/09	18:54	50	West	Sideswipe	Parked Motor Vehicle	East	Other	East	Parked	Improper Turning	0	0
4317181	6/25/09	9:39	15	North	Head-On	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	2	0
4452682	10/11/09	14:42	0	In Int.	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	1	0
4625253	3/5/10	22:47	0	In Int.	Vehicle - Pedestrian	Pedestrian	North	Making Right Turn	West	Proceeding Straight	Other	0	0
4765708	6/12/10	2:00	10	West	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	0	0
4826261	7/11/10	11:20	79	West	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Stopped in Road	Unsafe Speed	1	0
4942885	10/17/10	3:51	30	West	Rear-End	Parked Motor Vehicle	East	Proceeding Straight	East	Parked	Improper Turning	0	0
5006807	10/26/10	2:43	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Making Left Turn	Traffic Signals and Signs	0	0
4975959	12/15/10	14:45	0	In Int.	Other	Bicycle	East	Making Right Turn	East	Proceeding Straight	Improper Turning	1	0
5298860	8/18/11	11:25	0	In Int.	Head-On	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	2	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 3

Location: Jackson St / 7th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 26

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 26

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	JACKSON ST
Cross Street	7TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Madison St / 5th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 10

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2871783	10/26/06	19:46	0	In Int.	Broadside	Other Motor Vehicle	South	Stopped in Road	East	Stopped in Road	Traffic Signals and Signs	2	0
2988920	1/6/07	15:26	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Making Left Turn	Traffic Signals and Signs	0	0
3340045	9/3/07	10:20	0	In Int.	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	South	Making Left Turn	Improper Turning	0	0
3638685	3/3/08	10:28	0	In Int.	Broadside	Other Motor Vehicle	East	Making Right Turn	East	Proceeding Straight	Improper Turning	0	0
3870538	5/27/08	15:54	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
3866194	8/2/08	16:22	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	East	Proceeding Straight	Traffic Signals and Signs	0	0
4014595	11/4/08	17:21	0	In Int.	Vehicle - Pedestrian	Non-Collision	West	Making U Turn	Not Stated	Other	Unsafe Starting or Backing	0	0
4452705	10/21/09	14:21	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
4928911	9/12/10	16:36	0	In Int.	Hit Object	Fixed Object	East	Making Left Turn			Improper Turning	0	0
5269073	7/8/11	7:45	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	West	Proceeding Straight	Traffic Signals and Signs	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

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Page 2

Location: Madison St / 5th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 10

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 10

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	MADISON ST
Cross Street	5TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 1

Location: Madison St / 6th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 19

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2885285	11/7/06	16:45	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3150860	4/26/07	16:58	35	East	Rear-End	Other Motor Vehicle	West	Stopped in Road	West	Merging	Unsafe Starting or Backing	0	0
3250344	7/2/07	21:50	20	North	Rear-End	Other Motor Vehicle	South	Stopped in Road	South	Proceeding Straight	Unsafe Speed	0	0
3490869	12/3/07	8:53	0	In Int.	Head-On	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
3491400	12/6/07	13:30	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
3551646	12/29/07	9:01	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3850627	7/26/08	17:10	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
4106631	1/22/09	22:31	0	In Int.	Broadside	Other Motor Vehicle	South	Making Right Turn	South	Proceeding Straight	Improper Turning	0	0
4120375	2/21/09	10:23	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4198690	3/11/09	9:48	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
4206936	3/20/09	18:23	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4314188	7/10/09	7:59	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
4475225	11/8/09	6:29	15	South	Rear-End	Parked Motor Vehicle	Not Stated	Other Unsafe Turning	Not Stated	Not Stated	Improper Turning	0	0
4735932	6/23/10	1:47	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4827458	7/17/10	20:13	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

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Page 2

Location: Madison St / 6th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 19

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4846767	7/22/10	11:48	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
4845122	8/6/10	13:54	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
5038164	12/15/10	12:41	0	In Int.	Rear-End	Other Motor Vehicle	South	Proceeding Straight	South	Stopped in Road	Unsafe Speed	1	0
5213257	5/30/11	19:52	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 3

Location: Madison St / 6th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 19

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 19

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	MADISON ST
Cross Street	6TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Madison St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 33

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2775962	8/14/06	13:45	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Right Turn	East	Proceeding Straight	Traffic Signals and Signs	0	0
2985892	1/13/07	14:26	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3042915	2/3/07	12:53	0	In Int.	Sideswipe	Other Motor Vehicle	East	Changing Lanes	East	Proceeding Straight	Unsafe Lane Change	0	0
3260257	7/7/07	7:40	30	South	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	South	Proceeding Straight	Improper Turning	0	0
3388414	9/22/07	15:49	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	4	0
3442835	10/17/07	21:16	0	In Int.	Broadside	Other Motor Vehicle	South	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	0	0
3467813	11/1/07	9:30	0	In Int.	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
3467805	11/1/07	21:10	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
3572592	1/31/08	18:37	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Right Turn	South	Making Right Turn	Improper Turning	0	0
3657094	3/13/08	14:30	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3675710	3/22/08	8:48	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3826900	6/12/08	17:53	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3865357	6/12/08	19:02	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3823450	7/5/08	0:01	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4019401	12/1/08	16:56	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Madison St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 33

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4345347	8/3/09	22:10	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
4377897	8/20/09	10:14	10	North	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	South	Proceeding Straight	Unsafe Lane Change	0	0
4376834	8/25/09	11:41	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Auto R/W Violation	2	0
4455371	10/14/09	17:50	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
4471119	11/8/09	20:53	5	West	Rear-End	Other Motor Vehicle	East	Slowing/Stopping	East	Stopped in Road	Unsafe Speed	0	0
4512071	11/21/09	16:26	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4510493	11/21/09	17:44	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4527567	12/26/09	13:19	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
4624717	2/24/10	22:51	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
4638898	3/10/10	16:35	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4765707	6/10/10	23:35	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
4834211	7/13/10	13:00	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
4894352	10/5/10	13:29	7	South	Sideswipe	Parked Motor Vehicle	South	Making Right Turn	South	Parked	Improper Turning	0	0
4941730	10/30/10	10:23	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0
5194287	5/25/11	14:00	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 3

Location: Madison St / 7th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 33

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
5219283	7/3/11	9:44	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
5214905	7/19/11	13:38	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
5272770	8/15/11	10:00	0	In Int.	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0

Total Number of Collisions: 33

Settings Used For Query

Parameter

Setting

Street Name	MADISON ST
Cross Street	7TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 1

Location: Oak St / Embarcadero
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 9

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2753872	8/3/06	16:45	0	In Int.	Other	Other Object	North	Stopped in Road			Other Than Driver or Ped	1	0
2881234	11/2/06	21:50	0	In Int.	Hit Object	Fixed Object	East	Stopped in Road			Unsafe Speed	2	0
3376448	10/10/07	8:30	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Improper Turning	0	0
4120425	9/5/08	17:50	25	East	Overtuned	Non-Collision	East	Slowing/Stopping			Other Than Driver or Ped	0	0
3908991	9/8/08	9:00	0	In Int.	Sideswipe	Pedestrian	East	Making Right Turn	North	Proceeding Straight	Ped R/W Violation	1	0
4245736	5/21/09	19:45	0	In Int.	Broadside	Other Motor Vehicle	North	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	1	0
4452683	10/13/09	3:45	0	In Int.	Hit Object	Fixed Object	West	Making Left Turn			Other Improper Driving	0	0
4538189	11/28/09	0:59	50	East	Hit Object	Fixed Object	West	Proceeding Straight			Unsafe Speed	0	0
4678219	4/14/10	17:54	0	In Int.	Broadside	Other Motor Vehicle	West	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 2

Location: Oak St / Embarcadero
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 9

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 9

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	OAK ST
Cross Street	EMBARCADERO
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Oak St / Embarcadero West

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 9

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2753872	8/3/06	16:45	0	In Int.	Other	Other Object	North	Stopped in Road			Other Than Driver or Ped	1	0
2881234	11/2/06	21:50	0	In Int.	Hit Object	Fixed Object	East	Stopped in Road			Unsafe Speed	2	0
3376448	10/10/07	8:30	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Improper Turning	0	0
4120425	9/5/08	17:50	25	East	Overtuned	Non-Collision	East	Slowing/Stopping			Other Than Driver or Ped	0	0
3908991	9/8/08	9:00	0	In Int.	Sideswipe	Pedestrian	East	Making Right Turn	North	Proceeding Straight	Ped R/W Violation	1	0
4245736	5/21/09	19:45	0	In Int.	Broadside	Other Motor Vehicle	North	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	1	0
4452683	10/13/09	3:45	0	In Int.	Hit Object	Fixed Object	West	Making Left Turn			Other Improper Driving	0	0
4538189	11/28/09	0:59	50	East	Hit Object	Fixed Object	West	Proceeding Straight			Unsafe Speed	0	0
4678219	4/14/10	17:54	0	In Int.	Broadside	Other Motor Vehicle	West	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

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Page 2

Location: Oak St / Embarcadero West

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 9

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 9

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	OAK ST
Cross Street	EMBARCADERO WEST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 1

Location: Oak St / 3rd St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 3

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2770327	8/11/06	3:38	50	West	Broadside	Parked Motor Vehicle	South	Backing	North	Parked	Unsafe Starting or Backing	0	0
9023155	8/26/06	1:50	0	In Int.	Rear-End	Other Motor Vehicle	North	Proceeding Straight	North	Stopped in Road	Driving Under Influence	1	0
4663868	4/21/10	10:16	125	West	Rear-End	Other Motor Vehicle	East	Backing	East	Stopped in Road	Unsafe Starting or Backing	0	0

Total Number of Collisions: 3

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	OAK ST
Cross Street	3RD ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

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Page 1

Location: Oak St / 5th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 15

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2782747	8/21/06	10:50	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
2871796	10/23/06	9:14	0	In Int.	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
2942459	12/1/06	12:40	0	In Int.	Hit Object	Fixed Object	South	Proceeding Straight			Other Hazardous Movement	0	0
3122713	4/4/07	7:40	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	2	0
3641508	2/27/08	17:21	0	In Int.	Sideswipe	Other Motor Vehicle	North	Proceeding Straight	North	Proceeding Straight	Improper Turning	0	0
3694405	3/29/08	11:53	0	In Int.	Sideswipe	Other Motor Vehicle	South	Making Left Turn	North	Proceeding Straight	Improper Turning	0	0
4206928	3/18/09	9:45	19	West	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Making Right Turn	Improper Passing	0	0
4209075	3/21/09	12:01	0	In Int.	Sideswipe	Other Motor Vehicle	North	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
4208345	4/11/09	10:44	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	North	Proceeding Straight	Improper Turning	0	0
4736644	6/17/10	7:30	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Right Turn	North	Proceeding Straight	Unknown	0	0
4972252	11/25/10	9:34	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	2	0
4953403	12/3/10	1:47	50	South	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Other Than Driver or Ped	0	0
5228418	3/17/11	9:04	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
5219297	7/3/11	18:44	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
5251236	7/26/11	19:00	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	0	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 2

Location: Oak St / 5th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 15

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 15

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	OAK ST
Cross Street	5TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Oak St / 6th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 17

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2871807	10/31/06	19:00	0	In Int.	Broadside	Not Stated	West	Proceeding Straight	North	Proceeding Straight	Unsafe Speed	0	0
3143495	4/21/07	13:44	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
3152830	4/30/07	12:00	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	West	Making Right Turn	Improper Turning	0	0
3331298	8/17/07	10:45	0	In Int.	Sideswipe	Other Motor Vehicle	North	Making Right Turn	North	Making Right Turn	Unknown	0	0
3732655	3/30/08	14:20	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
3817148	6/19/08	19:55	20	North	Sideswipe	Other Motor Vehicle	North	Proceeding Straight	North	Proceeding Straight	Unsafe Lane Change	0	0
3915826	8/26/08	11:02	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
4007387	10/26/08	16:30	20	North	Sideswipe	Parked Motor Vehicle	South	Backing	North	Parked	Unsafe Starting or Backing	0	0
4349209	7/16/09	13:50	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Improper Turning	0	0
4344777	8/5/09	12:13	0	In Int.	Broadside	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Improper Turning	0	0
4402361	9/24/09	15:10	0	In Int.	Broadside	Other Motor Vehicle	North	Making Right Turn	West	Stopped in Road	Improper Turning	0	0
4527411	11/29/09	14:00	0	In Int.	Sideswipe	Other Motor Vehicle	West	Changing Lanes	West	Proceeding Straight	Unsafe Lane Change	0	0
4782302	5/7/10	22:50	15	West	Rear-End	Motor Vehicle on Other	East	Proceeding Straight	East	Slowing/Stopping	Driving Under Influence	0	0
4933168	10/10/10	12:31	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Unknown	1	0
4938364	10/31/10	11:47	0	In Int.	Sideswipe	Other Motor Vehicle	West	Making Right Turn	West	Making Right Turn	Improper Turning	0	0

City of Oakland
Traffic Engineering Department

Traffic Collision History Report

7/30/2013
Page 2

Location: Oak St / 6th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 17

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
5258006	7/27/11	6:55	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	0	0
5277437	8/16/11	18:15	0	In Int.	Vehicle - Pedestrian	Pedestrian	West	Making Left Turn	South	Proceeding Straight	Ped R/W Violation	2	0

Total Number of Collisions: 17

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	OAK ST
Cross Street	6TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: Oak St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 21

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2749530	8/1/06	19:50	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
2822896	10/3/06	4:50	0	In Int.	Broadside	Motor Vehicle on Other	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	1	0
3002151	1/20/07	10:05	0	In Int.	Sideswipe	Other Motor Vehicle	Not Stated	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3184362	4/29/07	16:42	0	In Int.	Vehicle - Pedestrian	Pedestrian	North	Making Left Turn	East	Not Stated	Ped R/W Violation	1	0
3246209	6/30/07	21:25	0	In Int.	Sideswipe	Other Motor Vehicle	North	Changing Lanes	North	Proceeding Straight	Unsafe Lane Change	0	0
3412191	10/9/07	14:20	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3494932	11/3/07	9:28	0	In Int.	Vehicle - Pedestrian	Pedestrian	North	Making Left Turn	East	Other	Ped R/W Violation	1	0
3590212	1/25/08	18:42	0	In Int.	Vehicle - Pedestrian	Pedestrian	East	Making Left Turn	East	Other	Ped R/W Violation	1	0
3639555	3/5/08	11:17	0	In Int.	Sideswipe	Other Motor Vehicle	North	Making Right Turn	East	Proceeding Straight	Auto R/W Violation	0	0
3648274	3/5/08	20:39	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	1	0
3658527	3/19/08	12:08	0	In Int.	Broadside	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
3731284	4/26/08	0:03	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
3766463	5/31/08	17:30	20	West	Rear-End	Parked Motor Vehicle	East	Proceeding Straight	East	Parked	Improper Turning	0	0
3798645	7/6/08	15:10	0	In Int.	Sideswipe	Other Motor Vehicle	East	Making Left Turn	East	Proceeding Straight	Improper Turning	0	0
3970022	11/6/08	21:25	40	West	Rear-End	Parked Motor Vehicle	East	Proceeding Straight	East	Parked	Unsafe Speed	1	0

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 2

Location: Oak St / 7th St

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 21

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
4042432	1/8/09	17:34	10	West	Rear-End	Other Motor Vehicle	East	Slowing/Stopping	East	Slowing/Stopping	Unsafe Speed	0	0
4133595	1/23/09	8:00	0	In Int.	Not Stated	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4427443	10/3/09	9:44	0	In Int.	Other	Other Motor Vehicle	South	Backing	North	Stopped in Road	Unsafe Starting or Backing	0	0
4452647	10/24/09	12:32	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	0	0
4936490	10/4/10	9:04	0	In Int.	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	1	0
5214909	7/19/11	13:30	0	In Int.	Broadside	Other Motor Vehicle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 3

Location: Oak St / 7th St
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 21

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 21

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	OAK ST
Cross Street	7TH ST
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

City of Oakland

Traffic Engineering Department

Traffic Collision History Report

7/30/2013

Page 1

Location: 5th Av / Embarcadero

Date Range Reported: 8/1/2006 - 8/31/2011

Total Number of Collisions: 11

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
2798166	9/16/06	20:30	0	In Int.	Broadside	Other Motor Vehicle	West	Making U Turn	West	Proceeding Straight	Improper Turning	0	0
2879977	11/3/06	11:00	50	West	Head-On	Other Motor Vehicle	East	Backing	West	Proceeding Straight	Unsafe Starting or Backing	0	0
3237554	6/7/07	18:49	6	West	Rear-End	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight	Unsafe Speed	0	0
3415733	10/13/07	16:40	0	In Int.	Sideswipe	Bicycle	East	Proceeding Straight	South	Proceeding Straight	Auto R/W Violation	1	0
3474041	10/20/07	7:46	0	In Int.	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	South	Making Left Turn	Auto R/W Violation	1	0
3639523	3/5/08	14:49	3	North	Vehicle - Pedestrian	Pedestrian	East	Backing	Not Stated	Not Stated	Unsafe Starting or Backing	1	0
4405618	8/31/09	12:30	2	North	Rear-End	Other Motor Vehicle	Not Stated	Proceeding Straight	South	Stopped in Road	Unsafe Speed	0	0
4402338	9/28/09	18:06	0	In Int.	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Making Left Turn	Auto R/W Violation	0	0
4565213	1/4/10	3:30	45	North	Hit Object	Fixed Object	South	Ran Off Road			Driving Under Influence	0	0
5014897	12/10/10	12:00	20	West	Rear-End	Other Motor Vehicle	East	Slowing/Stopping	East	Stopped in Road	Unsafe Speed	1	0
5210501	5/17/11	19:35	0	In Int.	Hit Object	Fixed Object	East	Making Left Turn			Improper Turning	0	0

**City of Oakland
Traffic Engineering Department**

Traffic Collision History Report

7/30/2013
Page 2

Location: 5th Av / Embarcadero
Date Range Reported: 8/1/2006 - 8/31/2011
Total Number of Collisions: 11

Report No.	Date	Time	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Direct. of Travel 1	Movement Prec. Coll. 1	Direct. of Travel 2	Movement Prec. Coll. 2	PCF	Inj.	Kil
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Total Number of Collisions: 11

Settings Used For Query

<u>Parameter</u>	<u>Setting</u>
Street Name	5TH AV
Cross Street	EMBARCADERO
Starting Date	8/1/2006
Ending Date	8/31/2011
Intersection	Intersection Related

Atlantic Avenue, sometimes referred to as Ralph Appezato Memorial Parkway (RAMP) at the Webster Street intersection
 At the intersections of Webster Street and Constitution Way
 Collision Analysis
 2008/06/01 - 2013/05/31

At or near Webster Street

Location	Rpt #	Acc-Date	Acc-Time	Viol-1	Inj	Ped	Bicycle	Kill	Remarks
2100 WEBSTER ST	80006649	9/10/2008	1834	21658A	0			0	WEBSTER .3N ATLANTIC - 2N - S/SWIPE - 2 STRAIGHT
WEBSTER ST/ATLANTIC AV	80007393	10/7/2008	2142	22350	0			0	WEBSTER 17S ATLANTIC - 2N - REAR END - STRAIGHT,STOPPED
WEBSTER ST/RALPH APPEZZATO MEMO PK	80008144	11/5/2008	1856	22107	0			0	WEBSTER X RALPH APPEZZATO - 2E - S/SWIPE - 2 L/TURN
2100 WEBSTER ST	80008340	11/12/2008	1736	22350	0			0	WEBSTER .5N RALPH APPEZZATO - 2S - R/END - STRAIGHT,STOPPED
600 RALPH APPEZZATO MEMO PK	80008878	12/5/2008	843	22350	0			0	RALPH APPEZZATO 23.8W WEBSTER - 2E - R/END - STRAIGHT,SLOWING
2100 WEBSTER ST	80008979	12/9/2008	1258	22350	0			0	WEBSTER 111N ATLANTIC - 2S - R/END - STRAIGHT,STOPPED
2100 WEBSTER ST	90000310	1/13/2009	1504	22107	0			0	WEBSTER 1N ATLANTIC - 2S - S/SWIPE - CHANGING LANES,STRAIGHT
2100 WEBSTER ST	90000757	1/30/2009	1217	22350	0			0	WEBSTER 53W ATLANTIC - 2E - R/END - STRAIGHT,STOPPED
WEBSTER ST/RALPH APPEZZATO MEMO PK	90002109	3/25/2009	1343	21453A	1			Y	WEBSTER X RALPH APPEZZATO - S,E - B/SIDE - R/TURN,ENTERING TRAFFIC ↓
2100 WEBSTER ST	90002786	4/20/2009	2105	22350	0			0	WEBSTER 42S ATLANTIC - 2N - R/END - STRAIGHT,STOPPED
2499 WEBSTER ST	90003193	5/6/2009	2125	23152	0			0	WEBSTER .6N ATLANTIC - N - S/SWIPE - CHANGING LANES
2100 WEBSTER ST	90005011	7/18/2009	149	21658A	0			0	WEBSTER 48S ATLANTIC - E,S - B/SIDE - MAKING L/TURN,STRAIGHT
2100 WEBSTER ST	90005107	7/21/2009	1331	22350	0			0	WEBSTER 54S ATLANTIC - 3N - R/END - STRAIGHT, 2 STOPPED
2101 WEBSTER ST	090005852	8/19/2009	1252	22350	0			0	WEBSTER 51N RALPH APPEZZATO MEM PK - 2S - REAREND - STRAIGHT,STOPPED
2400 WEBSTER ST	090006769	9/24/2009	1850	22107	0			0	WEBSTER .35N ATLANTIC - 2N - S/SWIPE - CHANGING/STRAIGHT
2100 WEBSTER ST	090007216	10/13/2009	1028	22350	0			0	WEBSTER .5N ATLANTIC - 2N - S/SWIPE - SLOWING,STRAIGHT
2100 WEBSTER ST	090007424	10/21/2009	1327	21801	0			0	WEBSTER 128S ATLANTIC - S,N - B/SIDE - LEFT TURN,STRAIGHT
1900 WEBSTER ST	090008570	12/10/2009	2106	22107	0			0	WEBSTER 114S ATLANTIC - 3S - S/SWIPE - 2 STRAIGHT,STOPPED
WEBSTER ST/ATLANTIC AV	100000808	2/5/2010	0717	22350	0			0	WEBSTER X ATLANTIC - N - SIDE SWIPE/LIGHTPOLE - LEFT TURN
2000 WEBSTER ST	100001272	2/22/2010	1703	22107	0			0	WEBSTER .25N ATLANTIC - 2N - SIDE SWIPE - MERGING,STRAIGHT
2100 WEBSTER ST	100002378	4/18/2010	0130	22350	0			0	WEBSTER 24N ATLANTIC - 2S - R/END - STRAIGHT,STOPPED
1900 WEBSTER ST	100002487	4/22/2010	1705	22107	0			0	WEBSTER 60S ATLANTIC - 2S - S/SWIPE - 2 STRAIGHT
600 RALPH APPEZZATO MEMO PK	100006371	10/4/2010	1300	21658A	0			0	RALPH APPEZZATO 50W WEBSTER - 2E - S/SWIPE - CHANGING LANES,STRAIGHT
700 ATLANTIC AV	100006424	10/6/2010	1125	22107	0			0	ATLANTIC 290E WEBSTER - 2S - S/SWIPE - 2 MAKING RIGHT TURN
2100 WEBSTER ST	100007314	11/13/2010	0831	22350	0			0	WEBSTER 92S ATLANTIC - 2D - R/END - STRAIGHT,STOPPED
2000 WEBSTER ST	100007353	11/14/2010	1904	22107	0			0	WEBSTER 12E ATLANTIC - W - HIT OBJECT - MAKING RIGHT TURN
700 ATLANTIC AV	100007366	11/15/2010	0959	22107	0			0	ATLANTIC 22E WEBSTER - E - HIT OBJECT - RAN OFF ROAD
720 ATLANTIC AV	110003030	5/21/2011	0833	21804	0			0	ATLANTIC AV 154E WEBSTER - N,E - BROADSIDE - 2 STRAIGHT
700 ATLANTIC AV	110004564	7/26/2011	1050	21804	2			Y	ATLANTIC 247E WEBSTER - S,E - B/SIDE - 2 STRAIGHT
2100 WEBSTER ST	110004712	8/1/2011	1504	22350	1			0	WEBSTER 5N ATLANTIC - 2N - R/END - STRAIGHT,STOPPED
WEBSTER ST/RALPH APPEZZATO MEMO PK	110006255	10/9/2011	0932	21658A	0			0	WEBSTER X RAMP - 3S - R/END - 1 CHANGING LANES, 2 STRAIGHT
2100 WEBSTER ST	110006188	10/6/2011	0853	22350	1			0	WEBSTER 19N RAMP - 2S - R/END - STRAIGHT,STOPPED
2100 WEBSTER ST	110007370	12/2/2011	0645	22350	0			0	WEBSTER 52N RALPH APPEZZATO - 2S - R/END - STRAIGHT,STOPPED
2100 WEBSTER ST	120000048	1/3/2012	1314	22350	1			0	WEBSTER 56S RALPH APPEZZATO - 2N - REAR END - STRAIGHT, STOPPED
2100 WEBSTER ST	120001241	2/27/2012	1851	23152	0			0	WEBSTER 42N ATLANTIC - 2S - R/END - STRAIGHT,STOPPED
2000 WEBSTER ST	120002601	5/1/2012	1756	22350	0			0	WEBSTER 6N ATLANTIC - 2S - R/END - 2 STRAIGHT
WEBSTER ST/ATLANTIC AV	130001232	3/8/2013	1149	22350	1			0	WEBSTER X ATLANTIC - 2N - R/END - STRAIGHT,CHANGING LANES
WEBSTER ST/RALPH APPEZZATO MEMO PK	130001376	3/15/2013	1146	22107	0			0	WEBSTER X RALPH APPEZZATO - W - HIT OBJ/SIGNAL LT - R/TURN
700 RALPH APPEZZATO	130001984	4/16/2013	1555	22350	0			0	RALPH APPEZZATO 12E WEBSTER - 2W - R/END - STRAIGHT,STOPPED
700 ATLANTIC AV	130002020	4/18/2013	0909	21804	0			0	ATLANTIC 175E WEBSTER - N,E - BROADSIDE - ENTER TRAFFIC,STRAIGHT

At or near Constitution Way

Location	Rpt #	Acc-Date	Acc-Time	Viol-1	Inj	Ped	Bicycle	Kill	Remarks
ATLANTIC AV/CONSTITUTION WY	080005526	7/28/2008	1125	21801	1			0	ATLANTIC X CONSTITUTION - E,W - B/SIDE - L/TURN,STRAIGHT
CONSTITUTION WY/ATLANTIC AV	080005020	7/10/2008	0714	21950A	1	Y		0	CONSTITUTION 12N ATLANTIC - E,W - VEH/PED - L/TURN,STRAIGHT <i>ped</i>
CONSTITUTION WY/ATLANTIC AV	80007118	9/27/2008	1938	21801	0			0	ATLANTIC X CONSTITUTION - E,W - HEAD ON - LFT/TRN,STRAIGHT
1900 CONSTITUTION WY	90000487	1/20/2009	754	21802	1			0	CONSTITUTION 6N ATLANTIC - S,W - B/SIDE - MAKING R/TURN, STRAIGHT
ATLANTIC AV/CONSTITUTION WY	90002323	4/2/2009	2001	UNK	0			0	ATLANTIC 300W CONSTITUTION - UNK,S - S/SWIPE - BACKING,PARKED
CONSTITUTION WY/ATLANTIC AV	090007061	10/6/2009	1605	22107	0			0	CONSTITUTION X ATLANTIC - N,W - B/SIDE - L/TURN,STRAIGHT
2000 CONSTITUTION WY	100000505	1/24/2010	0246	UNK	0			0	CONSTITUTION 0.1N ATLANTIC - S - HEAD ON/TRFC SIGN/TREE - RAN OFF RD
CONSTITUTION WY/ATLANTIC AV	100000559	1/26/2010	1224	21453A	1			0	CONSTITUTION X ATLANTIC - S,E,N - SIDE SWIPE - 2 STRAIGHT,STOPPED
ATLANTIC AV/CONSTITUTION WY	100003219	5/25/2010	1744	21801	0			0	ATLANTIC X CONSTITUTION - E,W - B/SIDE - MAKING LEFT TURN,STRAIGHT
CONSTITUTION WY/ATLANTIC AV	100004504	7/19/2010	1317	21950A	1	Y		0	CONSTITUTION X ATLANTIC - S,E - S/SWPE - UNK,UNK
1900 CONSTITUTION WY	100007888	12/9/2010	1448	22350	0			0	CONSTITUTION 25S ATLANTIC - 2N - R/END - STRAIGHT,STOPPED
ATLANTIC AV/CONSTITUTION WY	110000680	2/1/2011	1825	21800	0			0	ATLANTIC X CONSTITUTION - W,E - B/SIDE - MAKING LEFT TURN, STRAIGHT
700 ATLANTIC AV	110006276	10/10/2011	1420	22107	0			0	ATLANTIC 22E CONSTITUTION - E - HIT OBJECT - MAKING LEFT TURN
1900 CONSTITUTION WY	120001330	3/3/2012	0243	22107	0			0	CONSTITUTION 60.8S ATLANTIC - S - HIT OBJECT - STRAIGHT
ATLANTIC AV/CONSTITUTION WY	120005583	10/4/2012	2237	21801	1			0	ATLANTIC X CONSTITUTION - E,W - HEAD ON - L/TURN,STRAIGHT
1900 CONSTITUTION WY	120006258	11/9/2012	1335	22106	0			0	CONSTITUTION 38N ATLANTIC - 2S - R/END - STRAIGHT,STOPPED

APPENDIX C

Air Quality Technical Data

**Jack London Square - 2004 Construction Emissions
Alameda County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	90	1000sqft
General Office Building	134	1000sqft
Movie Theater (No Matinee)	41	1000sqft
Regional Shopping Center	59	1000sqft
Regional Shopping Center	15	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)		Utility Company
Climate Zone	5	Precipitation Freq (Days)	2.2	
			63	

1.3 User Entered Comments

Project Characteristics -
 Land Use - Proposed uses on Sites D and F2.
 Construction Phase - Anticipated two-year construction schedule period for 2004 Project .
 Demolition - Sites D and F footprints = 38,000 sf + 57,000 sf = 95,000 sf
 Debris weight to area ration = 0.046 ton/sf (from USEPA); 95,000 sf x 0.046 tons/sf = 4,370 tons

Grading - Total footprints of Sites D and F2: 38,000 sf + 57,000 sf = 95,000 sf = 2.18 acres.

Assumes 6 ft of excavation, resulting in approximately 21,100 cy of soil excavation.

Architectural Coating - VOC limit of 150 g/L for non-flat glossy coats effective beginning January 1, 2011 under BAAQMD Rule 3 (architectural coatings). No coatings anticipated for exterior area.

Construction Off-road Equipment Mitigation - Assumes standard BMPs such as daily watering and limiting of construction vehicle speeds.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.97	77.83	46.06	0.12	67.99	3.40	71.39	9.94	3.40	13.24	0.00	12,065.41	0.00	0.80	0.00	12,082.27
2016	33.63	36.90	36.94	0.08	2.55	2.57	4.61	0.12	2.57	2.59	0.00	7,436.40	0.00	0.50	0.00	7,446.97
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.97	77.83	46.06	0.12	64.23	3.40	67.63	3.88	3.40	7.18	0.00	12,065.41	0.00	0.80	0.00	12,082.27
2016	33.63	36.90	36.94	0.08	2.55	2.57	4.61	0.12	2.57	2.59	0.00	7,436.40	0.00	0.50	0.00	7,446.97
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.83	0.00	2.83	0.00	0.00	0.00						0.00
Off-Road	7.90	60.98	39.63	0.07		2.92	2.92		2.92	2.92		7,510.81		0.71		7,525.67
Total	7.90	60.98	39.63	0.07	2.83	2.92	5.75	0.00	2.92	2.92		7,510.81		0.71		7,525.67

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.50	5.86	2.56	0.01	10.09	0.19	10.28	0.04	0.19	0.23		1,089.03		0.02		1,089.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	1.01	0.00	0.22	0.01	0.23	0.01	0.01	0.02		175.18		0.01		175.38
Total	0.60	5.95	3.57	0.01	10.31	0.20	10.51	0.05	0.20	0.25		1,264.21		0.03		1,264.92

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.11	0.00	1.11	0.00	0.00	0.00						0.00
Off-Road	7.90	60.98	39.63	0.07		2.92	2.92		2.92	2.92	0.00	7,510.81		0.71		7,525.67
Total	7.90	60.98	39.63	0.07	1.11	2.92	4.03	0.00	2.92	2.92	0.00	7,510.81		0.71		7,525.67

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.50	5.86	2.56	0.01	10.09	0.19	10.28	0.04	0.19	0.23		1,089.03		0.02		1,089.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	1.01	0.00	0.22	0.01	0.23	0.01	0.01	0.02		175.18		0.01		175.38
Total	0.60	5.95	3.57	0.01	10.31	0.20	10.51	0.05	0.20	0.25		1,264.21		0.03		1,264.92

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.20	0.00	18.20	9.93	0.00	9.93						0.00
Off-Road	8.85	69.73	40.95	0.07		3.29	3.29		3.29	3.29		7,997.69		0.79		8,014.30
Total	8.85	69.73	40.95	0.07	18.20	3.29	21.49	9.93	3.29	13.22		7,997.69		0.79		8,014.30

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.11	1.22	0.00	0.27	0.01	0.28	0.01	0.01	0.02		210.21		0.01		210.46
Total	0.12	0.11	1.22	0.00	0.27	0.01	0.28	0.01	0.01	0.02		210.21		0.01		210.46

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.10	0.00	7.10	3.87	0.00	3.87						0.00
Off-Road	8.85	69.73	40.95	0.07		3.29	3.29		3.29	3.29	0.00	7,997.69		0.79		8,014.30
Total	8.85	69.73	40.95	0.07	7.10	3.29	10.39	3.87	3.29	7.16	0.00	7,997.69		0.79		8,014.30

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Worker	0.12	0.11	1.22	0.00	0.27	0.01	0.28	0.01	0.01	0.02		210.21		0.01		210.46
Total	0.12	0.11	1.22	0.00	0.27	0.01	0.28	0.01	0.01	0.02		210.21		0.01		210.46

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					6.16	0.00	6.16	3.32	0.00	3.32							0.00
Off-Road	5.59	41.92	29.44	0.05		2.23	2.23		2.23	2.23		5,240.06		0.50			5,250.58
Total	5.59	41.92	29.44	0.05	6.16	2.23	8.39	3.32	2.23	5.55		5,240.06		0.50			5,250.58

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.02	35.81	15.61	0.06	61.60	1.16	62.76	0.22	1.16	1.38		6,650.17		0.15		6,653.24
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	1.01	0.00	0.22	0.01	0.23	0.01	0.01	0.02		175.18		0.01		175.38
Total	3.12	35.90	16.62	0.06	61.82	1.17	62.99	0.23	1.17	1.40		6,825.35		0.16		6,828.62

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					2.40	0.00	2.40	1.30	0.00	1.30						0.00
Off-Road	5.59	41.92	29.44	0.05		2.23	2.23		2.23	2.23	0.00	5,240.06		0.50		5,250.58
Total	5.59	41.92	29.44	0.05	2.40	2.23	4.63	1.30	2.23	3.53	0.00	5,240.06		0.50		5,250.58

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.02	35.81	15.61	0.06	61.60	1.16	62.76	0.22	1.16	1.38		6,650.17		0.15		6,653.24
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	1.01	0.00	0.22	0.01	0.23	0.01	0.01	0.02		175.18		0.01		175.38
Total	3.12	35.90	16.62	0.06	61.82	1.17	62.99	0.23	1.17	1.40		6,825.35		0.16		6,828.62

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80		4,040.61		0.39		4,048.81
Total	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80		4,040.61		0.39		4,048.81

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.88	4.03	0.01	0.52	0.23	0.75	0.04	0.23	0.27		1,535.99		0.03		1,536.66
Worker	0.76	0.70	7.63	0.01	1.69	0.05	1.74	0.06	0.05	0.11		1,319.65		0.07		1,321.20
Total	1.42	8.58	11.66	0.02	2.21	0.28	2.49	0.10	0.28	0.38		2,855.64		0.10		2,857.86

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80	0.00	4,040.61		0.39		4,048.81
Total	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80	0.00	4,040.61		0.39		4,048.81

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.88	4.03	0.01	0.52	0.23	0.75	0.04	0.23	0.27		1,535.99		0.03		1,536.66
Worker	0.76	0.70	7.63	0.01	1.69	0.05	1.74	0.06	0.05	0.11		1,319.65		0.07		1,321.20
Total	1.42	8.58	11.66	0.02	2.21	0.28	2.49	0.10	0.28	0.38		2,855.64		0.10		2,857.86

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58		4,040.61		0.36		4,048.10
Total	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58		4,040.61		0.36		4,048.10

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.61	7.24	3.77	0.01	0.52	0.21	0.72	0.04	0.21	0.25		1,537.26		0.03		1,537.87
Worker	0.71	0.64	7.05	0.01	1.69	0.05	1.75	0.06	0.05	0.12		1,310.58		0.07		1,312.05
Total	1.32	7.88	10.82	0.02	2.21	0.26	2.47	0.10	0.26	0.37		2,847.84		0.10		2,849.92

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58	0.00	4,040.61		0.36		4,048.10
Total	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58	0.00	4,040.61		0.36		4,048.10

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.61	7.24	3.77	0.01	0.52	0.21	0.72	0.04	0.21	0.25		1,537.26		0.03		1,537.87
Worker	0.71	0.64	7.05	0.01	1.69	0.05	1.75	0.06	0.05	0.12		1,310.58		0.07		1,312.05
Total	1.32	7.88	10.82	0.02	2.21	0.26	2.47	0.10	0.26	0.37		2,847.84		0.10		2,849.92

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	28.18	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.14	0.13	1.44	0.00	0.34	0.01	0.36	0.01	0.01	0.02		266.76		0.01		267.05
Total	0.14	0.13	1.44	0.00	0.34	0.01	0.36	0.01	0.01	0.02		266.76		0.01		267.05

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	28.18	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.14	0.13	1.44	0.00	0.34	0.01	0.36	0.01	0.01	0.02		266.76		0.01		267.05
Total	0.14	0.13	1.44	0.00	0.34	0.01	0.36	0.01	0.01	0.02		266.76		0.01		267.05

3.7 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35		2,917.64		0.41		2,926.29
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35		2,917.64		0.41		2,926.29

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.08	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		173.97		0.01		174.17
Total	0.09	0.08	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		173.97		0.01		174.17

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35	0.00	2,917.64		0.41		2,926.29
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35	0.00	2,917.64		0.41		2,926.29

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.08	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		173.97		0.01		174.17
Total	0.09	0.08	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		173.97		0.01		174.17

Jack London Square - 2004 Construction Emissions
Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	90	1000sqft
General Office Building	134	1000sqft
Movie Theater (No Matinee)	41	1000sqft
Regional Shopping Center	59	1000sqft
Regional Shopping Center	15	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	Utility Company
Climate Zone	5	2.2	
		Precipitation Freq (Days)	
		63	

1.3 User Entered Comments

Project Characteristics -
 Land Use - Proposed uses on Sites D and F2.
 Construction Phase - Anticipated two-year construction schedule period for 2004 Project .
 Demolition - Sites D and F footprints = 38,000 sf + 57,000 sf = 95,000 sf
 Debris weight to area ration = 0.046 ton/sf (from USEPA); 95,000 sf x 0.046 tons/sf = 4,370 tons

Grading - Total footprints of Sites D and F2: 38,000 sf + 57,000 sf = 95,000 sf = 2.18 acres.

Assumes 6 ft of excavation, resulting in approximately 21,100 cy of soil excavation.

Architectural Coating - VOC limit of 150 g/L for non-flat glossy coats effective beginning January 1, 2011 under BAAQMD Rule 3 (architectural coatings). No coatings anticipated for exterior area.

Construction Off-road Equipment Mitigation - Assumes standard BMPs such as daily watering and limiting of construction vehicle speeds.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.98	77.75	48.40	0.12	67.99	3.41	71.41	9.94	3.41	13.24	0.00	12,008.89	0.00	0.80	0.00	12,025.74
2016	33.74	36.91	37.26	0.08	2.55	2.57	4.61	0.12	2.57	2.59	0.00	7,250.45	0.00	0.50	0.00	7,260.95
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.98	77.75	48.40	0.12	64.23	3.41	67.65	3.88	3.41	7.18	0.00	12,008.89	0.00	0.80	0.00	12,025.74
2016	33.74	36.91	37.26	0.08	2.55	2.57	4.61	0.12	2.57	2.59	0.00	7,250.45	0.00	0.50	0.00	7,260.95
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					2.83	0.00	2.83	0.00	0.00	0.00							0.00
Off-Road	7.90	60.98	39.63	0.07		2.92	2.92		2.92	2.92		7,510.81		0.71			7,525.67
Total	7.90	60.98	39.63	0.07	2.83	2.92	5.75	0.00	2.92	2.92		7,510.81		0.71			7,525.67

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.51	5.85	2.95	0.01	10.09	0.19	10.28	0.04	0.19	0.23		1,082.92		0.02			1,083.45
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00			0.00
Worker	0.11	0.10	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		155.97		0.01			156.16
Total	0.62	5.95	3.89	0.01	10.31	0.20	10.51	0.05	0.20	0.25		1,238.89		0.03			1,239.61

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.11	0.00	1.11	0.00	0.00	0.00						0.00
Off-Road	7.90	60.98	39.63	0.07		2.92	2.92		2.92	2.92	0.00	7,510.81		0.71		7,525.67
Total	7.90	60.98	39.63	0.07	1.11	2.92	4.03	0.00	2.92	2.92	0.00	7,510.81		0.71		7,525.67

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.51	5.85	2.95	0.01	10.09	0.19	10.28	0.04	0.19	0.23		1,082.92		0.02		1,083.45
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.10	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		155.97		0.01		156.16
Total	0.62	5.95	3.89	0.01	10.31	0.20	10.51	0.05	0.20	0.25		1,238.89		0.03		1,239.61

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.20	0.00	18.20	9.93	0.00	9.93						0.00
Off-Road	8.85	69.73	40.95	0.07		3.29	3.29		3.29	3.29		7,997.69		0.79		8,014.30
Total	8.85	69.73	40.95	0.07	18.20	3.29	21.49	9.93	3.29	13.22		7,997.69		0.79		8,014.30

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.12	1.13	0.00	0.27	0.01	0.28	0.01	0.01	0.02		187.16		0.01		187.39
Total	0.13	0.12	1.13	0.00	0.27	0.01	0.28	0.01	0.01	0.02		187.16		0.01		187.39

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.10	0.00	7.10	3.87	0.00	3.87						0.00
Off-Road	8.85	69.73	40.95	0.07		3.29	3.29		3.29	3.29	0.00	7,997.69		0.79		8,014.30
Total	8.85	69.73	40.95	0.07	7.10	3.29	10.39	3.87	3.29	7.16	0.00	7,997.69		0.79		8,014.30

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Worker	0.13	0.12	1.13	0.00	0.27	0.01	0.28	0.01	0.01	0.02		187.16		0.01		187.39
Total	0.13	0.12	1.13	0.00	0.27	0.01	0.28	0.01	0.01	0.02		187.16		0.01		187.39

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					6.16	0.00	6.16	3.32	0.00	3.32							0.00
Off-Road	5.59	41.92	29.44	0.05		2.23	2.23		2.23	2.23		5,240.06		0.50			5,250.58
Total	5.59	41.92	29.44	0.05	6.16	2.23	8.39	3.32	2.23	5.55		5,240.06		0.50			5,250.58

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.13	35.73	18.02	0.06	61.60	1.18	62.78	0.22	1.18	1.40		6,612.86		0.15		6,616.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.10	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		155.97		0.01		156.16
Total	3.24	35.83	18.96	0.06	61.82	1.19	63.01	0.23	1.19	1.42		6,768.83		0.16		6,772.22

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					2.40	0.00	2.40	1.30	0.00	1.30						0.00
Off-Road	5.59	41.92	29.44	0.05		2.23	2.23		2.23	2.23	0.00	5,240.06		0.50		5,250.58
Total	5.59	41.92	29.44	0.05	2.40	2.23	4.63	1.30	2.23	3.53	0.00	5,240.06		0.50		5,250.58

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.13	35.73	18.02	0.06	61.60	1.18	62.78	0.22	1.18	1.40		6,612.86		0.15		6,616.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.10	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		155.97		0.01		156.16
Total	3.24	35.83	18.96	0.06	61.82	1.19	63.01	0.23	1.19	1.42		6,768.83		0.16		6,772.22

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80		4,040.61		0.39		4,048.81
Total	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80		4,040.61		0.39		4,048.81

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.71	7.82	5.03	0.01	0.52	0.24	0.75	0.04	0.24	0.28		1,522.92		0.03		1,523.64
Worker	0.81	0.77	7.08	0.01	1.69	0.05	1.74	0.06	0.05	0.11		1,174.97		0.07		1,176.42
Total	1.52	8.59	12.11	0.02	2.21	0.29	2.49	0.10	0.29	0.39		2,697.89		0.10		2,700.06

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80	0.00	4,040.61		0.39		4,048.81
Total	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80	0.00	4,040.61		0.39		4,048.81

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.71	7.82	5.03	0.01	0.52	0.24	0.75	0.04	0.24	0.28		1,522.92		0.03		1,523.64
Worker	0.81	0.77	7.08	0.01	1.69	0.05	1.74	0.06	0.05	0.11		1,174.97		0.07		1,176.42
Total	1.52	8.59	12.11	0.02	2.21	0.29	2.49	0.10	0.29	0.39		2,697.89		0.10		2,700.06

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58		4,040.61		0.36		4,048.10
Total	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58		4,040.61		0.36		4,048.10

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.17	4.74	0.01	0.52	0.21	0.73	0.04	0.21	0.25		1,524.02		0.03		1,524.68
Worker	0.76	0.70	6.51	0.01	1.69	0.05	1.75	0.06	0.05	0.12		1,167.08		0.07		1,168.45
Total	1.42	7.87	11.25	0.02	2.21	0.26	2.48	0.10	0.26	0.37		2,691.10		0.10		2,693.13

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58	0.00	4,040.61		0.36		4,048.10
Total	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58	0.00	4,040.61		0.36		4,048.10

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.17	4.74	0.01	0.52	0.21	0.73	0.04	0.21	0.25		1,524.02		0.03		1,524.68
Worker	0.76	0.70	6.51	0.01	1.69	0.05	1.75	0.06	0.05	0.12		1,167.08		0.07		1,168.45
Total	1.42	7.87	11.25	0.02	2.21	0.26	2.48	0.10	0.26	0.37		2,691.10		0.10		2,693.13

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	28.18	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.15	0.14	1.32	0.00	0.34	0.01	0.36	0.01	0.01	0.02		237.55		0.01		237.83
Total	0.15	0.14	1.32	0.00	0.34	0.01	0.36	0.01	0.01	0.02		237.55		0.01		237.83

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	28.18	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.14	1.32	0.00	0.34	0.01	0.36	0.01	0.01	0.02		237.55		0.01		237.83
Total	0.15	0.14	1.32	0.00	0.34	0.01	0.36	0.01	0.01	0.02		237.55		0.01		237.83

3.7 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35		2,917.64		0.41		2,926.29
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35		2,917.64		0.41		2,926.29

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	0.86	0.00	0.22	0.01	0.23	0.01	0.01	0.02		154.92		0.01		155.10
Total	0.10	0.09	0.86	0.00	0.22	0.01	0.23	0.01	0.01	0.02		154.92		0.01		155.10

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35	0.00	2,917.64		0.41		2,926.29
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35	0.00	2,917.64		0.41		2,926.29

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	0.86	0.00	0.22	0.01	0.23	0.01	0.01	0.02		154.92		0.01		155.10
Total	0.10	0.09	0.86	0.00	0.22	0.01	0.23	0.01	0.01	0.02		154.92		0.01		155.10

**Jack London Square - 2004 Construction Emissions
Alameda County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	90	1000sqft
General Office Building	134	1000sqft
Movie Theater (No Matinee)	41	1000sqft
Regional Shopping Center	59	1000sqft
Regional Shopping Center	15	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)		Utility Company
Climate Zone	5	Precipitation Freq (Days)	2.2	
			63	

1.3 User Entered Comments

Project Characteristics -
 Land Use - Proposed uses on Sites D and F2.
 Construction Phase - Anticipated two-year construction schedule period for 2004 Project .
 Demolition - Sites D and F footprints = 38,000 sf + 57,000 sf = 95,000 sf
 Debris weight to area ration = 0.046 ton/sf (from USEPA); 95,000 sf x 0.046 tons/sf = 4,370 tons

Grading - Total footprints of Sites D and F2: 38,000 sf + 57,000 sf = 95,000 sf = 2.18 acres.

Assumes 6 ft of excavation, resulting in approximately 21,100 cy of soil excavation.

Architectural Coating - VOC limit of 150 g/L for non-flat glossy coats effective beginning January 1, 2011 under BAAQMD Rule 3 (architectural coatings). No coatings anticipated for exterior area.

Construction Off-road Equipment Mitigation - Assumes standard BMPs such as daily watering and limiting of construction vehicle speeds.

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.87	6.27	4.91	0.01	1.41	0.32	1.72	0.16	0.32	0.48	0.00	913.76	913.76	0.07	0.00	915.16
2016	2.42	4.12	3.99	0.01	0.20	0.24	0.44	0.01	0.24	0.25	0.00	700.87	700.87	0.05	0.00	701.93
Total	3.29	10.39	8.90	0.02	1.61	0.56	2.16	0.17	0.56	0.73	0.00	1,614.63	1,614.63	0.12	0.00	1,617.09

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.87	6.27	4.91	0.01	1.22	0.32	1.54	0.07	0.32	0.39	0.00	913.76	913.76	0.07	0.00	915.16
2016	2.42	4.12	3.99	0.01	0.20	0.24	0.44	0.01	0.24	0.25	0.00	700.87	700.87	0.05	0.00	701.93
Total	3.29	10.39	8.90	0.02	1.42	0.56	1.98	0.08	0.56	0.64	0.00	1,614.63	1,614.63	0.12	0.00	1,617.09

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.05	0.00	0.05	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.13	1.01	0.65	0.00		0.05	0.05		0.05	0.05	0.00	112.40	112.40	0.01	0.00	112.62
Total	0.13	1.01	0.65	0.00	0.05	0.05	0.10	0.01	0.05	0.06	0.00	112.40	112.40	0.01	0.00	112.62

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.09	0.05	0.00	0.13	0.00	0.14	0.00	0.00	0.00	0.00	16.26	16.26	0.00	0.00	16.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.37
Total	0.01	0.09	0.07	0.00	0.13	0.00	0.14	0.00	0.00	0.00	0.00	18.62	18.62	0.00	0.00	18.63

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.13	1.01	0.65	0.00		0.05	0.05		0.05	0.05	0.00	112.40	112.40	0.01	0.00	112.62
Total	0.13	1.01	0.65	0.00	0.02	0.05	0.07	0.00	0.05	0.05	0.00	112.40	112.40	0.01	0.00	112.62

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.09	0.05	0.00	0.13	0.00	0.14	0.00	0.00	0.00	0.00	16.26	16.26	0.00	0.00	16.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.37
Total	0.01	0.09	0.07	0.00	0.13	0.00	0.14	0.00	0.00	0.00	0.00	18.62	18.62	0.00	0.00	18.63

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.15	0.00	0.15	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.08	0.59	0.35	0.00		0.03	0.03		0.03	0.03	0.00	61.65	61.65	0.01	0.00	61.78
Total	0.08	0.59	0.35	0.00	0.15	0.03	0.18	0.08	0.03	0.11	0.00	61.65	61.65	0.01	0.00	61.78

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.46	0.00	0.00	1.46
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.46	0.00	0.00	1.46

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.06	0.00	0.06	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.08	0.59	0.35	0.00		0.03	0.03		0.03	0.03	0.00	61.65	61.65	0.01	0.00	61.78
Total	0.08	0.59	0.35	0.00	0.06	0.03	0.09	0.03	0.03	0.06	0.00	61.65	61.65	0.01	0.00	61.78

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.46	0.00	0.00	1.46
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.46	0.00	0.00	1.46

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.10	0.00	0.10	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.09	0.69	0.49	0.00		0.04	0.04		0.04	0.04	0.00	78.41	78.41	0.01	0.00	78.57
Total	0.09	0.69	0.49	0.00	0.10	0.04	0.14	0.05	0.04	0.09	0.00	78.41	78.41	0.01	0.00	78.57

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.05	0.58	0.28	0.00	0.81	0.02	0.83	0.00	0.02	0.02	0.00	99.26	99.26	0.00	0.00	99.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.37
Total	0.05	0.58	0.30	0.00	0.81	0.02	0.83	0.00	0.02	0.02	0.00	101.62	101.62	0.00	0.00	101.68

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Fugitive Dust					0.04	0.00	0.04	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.09	0.69	0.49	0.00		0.04	0.04		0.04	0.04	0.00	78.41	78.41	0.01	0.00	78.57
Total	0.09	0.69	0.49	0.00	0.04	0.04	0.08	0.02	0.04	0.06	0.00	78.41	78.41	0.01	0.00	78.57

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.05	0.58	0.28	0.00	0.81	0.02	0.83	0.00	0.02	0.02	0.00	99.26	99.26	0.00	0.00	99.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.37
Total	0.05	0.58	0.30	0.00	0.81	0.02	0.83	0.00	0.02	0.02	0.00	101.62	101.62	0.00	0.00	101.68

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.38	2.56	2.02	0.00		0.16	0.16		0.16	0.16	0.00	322.48	322.48	0.03	0.00	323.14
Total	0.38	2.56	2.02	0.00		0.16	0.16		0.16	0.16	0.00	322.48	322.48	0.03	0.00	323.14

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.68	0.41	0.00	0.04	0.02	0.06	0.00	0.02	0.02	0.00	122.10	122.10	0.00	0.00	122.16
Worker	0.06	0.06	0.62	0.00	0.12	0.00	0.12	0.01	0.00	0.01	0.00	95.01	95.01	0.01	0.00	95.12
Total	0.12	0.74	1.03	0.00	0.16	0.02	0.18	0.01	0.02	0.03	0.00	217.11	217.11	0.01	0.00	217.28

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.38	2.56	2.02	0.00		0.16	0.16		0.16	0.16	0.00	322.48	322.48	0.03	0.00	323.14
Total	0.38	2.56	2.02	0.00		0.16	0.16		0.16	0.16	0.00	322.48	322.48	0.03	0.00	323.14

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.68	0.41	0.00	0.04	0.02	0.06	0.00	0.02	0.02	0.00	122.10	122.10	0.00	0.00	122.16
Worker	0.06	0.06	0.62	0.00	0.12	0.00	0.12	0.01	0.00	0.01	0.00	95.01	95.01	0.01	0.00	95.12
Total	0.12	0.74	1.03	0.00	0.16	0.02	0.18	0.01	0.02	0.03	0.00	217.11	217.11	0.01	0.00	217.28

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.41	2.70	2.33	0.00		0.16	0.16		0.16	0.16	0.00	373.79	373.79	0.03	0.00	374.48
Total	0.41	2.70	2.33	0.00		0.16	0.16		0.16	0.16	0.00	373.79	373.79	0.03	0.00	374.48

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.07	0.72	0.45	0.00	0.04	0.02	0.06	0.00	0.02	0.03	0.00	141.63	141.63	0.00	0.00	141.69
Worker	0.07	0.07	0.66	0.00	0.14	0.01	0.14	0.01	0.01	0.01	0.00	109.38	109.38	0.01	0.00	109.51
Total	0.14	0.79	1.11	0.00	0.18	0.03	0.20	0.01	0.03	0.04	0.00	251.01	251.01	0.01	0.00	251.20

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.41	2.70	2.33	0.00		0.16	0.16		0.16	0.16	0.00	373.79	373.79	0.03	0.00	374.48
Total	0.41	2.70	2.33	0.00		0.16	0.16		0.16	0.16	0.00	373.79	373.79	0.03	0.00	374.48

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.07	0.72	0.45	0.00	0.04	0.02	0.06	0.00	0.02	0.03	0.00	141.63	141.63	0.00	0.00	141.69
Worker	0.07	0.07	0.66	0.00	0.14	0.01	0.14	0.01	0.01	0.01	0.00	109.38	109.38	0.01	0.00	109.51
Total	0.14	0.79	1.11	0.00	0.18	0.03	0.20	0.01	0.03	0.04	0.00	251.01	251.01	0.01	0.00	251.20

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.77					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.19	16.19	0.00	0.00	16.23
Total	1.79	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.19	16.19	0.00	0.00	16.23

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.86	13.86	0.00	0.00	13.88
Total	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.86	13.86	0.00	0.00	13.88

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.77					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.19	16.19	0.00	0.00	16.23
Total	1.79	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.19	16.19	0.00	0.00	16.23

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.86	13.86	0.00	0.00	13.88
Total	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.86	13.86	0.00	0.00	13.88

3.7 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.08	0.47	0.34	0.00		0.04	0.04		0.04	0.04	0.00	43.66	43.66	0.01	0.00	43.79
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.08	0.47	0.34	0.00		0.04	0.04		0.04	0.04	0.00	43.66	43.66	0.01	0.00	43.79

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	2.35	0.00	0.00	2.35
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	2.35	0.00	0.00	2.35

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.08	0.47	0.34	0.00		0.04	0.04		0.04	0.04	0.00	43.66	43.66	0.01	0.00	43.79
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.08	0.47	0.34	0.00		0.04	0.04		0.04	0.04	0.00	43.66	43.66	0.01	0.00	43.79

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	2.35	0.00	0.00	2.35
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	2.35	0.00	0.00	2.35

**Jack London Square - 2013 Project Construction Emissions (Max. Residential Scenario)
Alameda County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Apartments High Rise	200	Dwelling Unit
Apartments High Rise	466	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)		Utility Company
Climate Zone	5		2.2	
		Precipitation Freq (Days)		
			63	

1.3 User Entered Comments

Project Characteristics -

Land Use - Site D: 200 DU on 24,000 sf footprint

Site F2: 466 DU on 57,000 sf footprint

Construction Phase - Two-year construction schedule period for 2013 Project (Max. Residential) adjusted based on CalEEMod default schedule.

Demolition - Sites D and F2 footprints = 24,000 sf + 57,000 sf = 81,000 sf

Debris weight to area ratio = 0.046 ton/sf (from USEPA)

81,000 sf x 0.046 tons/sf = 3,726 tons

Grading - Total acreage of Sites D and F2 is 1.86 acres.

Architectural Coating - VOC limit of 150 g/L for non-flat glossy coats effective beginning January 1, 2011 under BAAQMD Rule 3 (architectural coatings). No coatings anticipated for exterior area.

Construction Off-road Equipment Mitigation - Assumes implementation of standard BMPs including daily watering and limiting speeds of construction vehicles.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.60	89.26	53.14	0.14	46.63	3.27	49.90	2.90	3.27	6.17	0.00	15,123.26	0.00	0.69	0.00	15,137.80
2016	73.25	33.47	57.95	0.12	9.28	1.90	11.18	0.37	1.90	2.27	0.00	11,472.26	0.00	0.73	0.00	11,487.68
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.60	89.26	53.14	0.14	43.78	3.27	47.04	1.39	3.27	4.65	0.00	15,123.26	0.00	0.69	0.00	15,137.80
2016	73.25	33.47	57.95	0.12	9.28	1.90	11.18	0.37	1.90	2.27	0.00	11,472.26	0.00	0.73	0.00	11,487.68
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					2.04	0.00	2.04	0.00	0.00	0.00							0.00
Off-Road	4.43	33.38	22.08	0.04		1.88	1.88		1.88	1.88		3,946.47		0.40			3,954.79
Total	4.43	33.38	22.08	0.04	2.04	1.88	3.92	0.00	1.88	1.88		3,946.47		0.40			3,954.79

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.36	4.23	1.84	0.01	8.59	0.14	8.73	0.03	0.14	0.16		784.97		0.02		785.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.08	0.88	0.00	0.19	0.01	0.20	0.01	0.01	0.01		151.82		0.01		152.00
Total	0.45	4.31	2.72	0.01	8.78	0.15	8.93	0.04	0.15	0.17		936.79		0.03		937.34

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					0.80	0.00	0.80	0.00	0.00	0.00						0.00
Off-Road	4.43	33.38	22.08	0.04		1.88	1.88		1.88	1.88	0.00	3,946.47		0.40		3,954.79
Total	4.43	33.38	22.08	0.04	0.80	1.88	2.68	0.00	1.88	1.88	0.00	3,946.47		0.40		3,954.79

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.36	4.23	1.84	0.01	8.59	0.14	8.73	0.03	0.14	0.16		784.97		0.02		785.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.08	0.88	0.00	0.19	0.01	0.20	0.01	0.01	0.01		151.82		0.01		152.00
Total	0.45	4.31	2.72	0.01	8.78	0.15	8.93	0.04	0.15	0.17		936.79		0.03		937.34

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.60	0.00	5.60	2.90	0.00	2.90						0.00
Off-Road	3.54	27.44	17.32	0.03		1.34	1.34		1.34	1.34		3,253.39		0.32		3,260.02
Total	3.54	27.44	17.32	0.03	5.60	1.34	6.94	2.90	1.34	4.24		3,253.39		0.32		3,260.02

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.05	0.54	0.00	0.12	0.00	0.12	0.00	0.00	0.01		93.43		0.01		93.54
Total	0.05	0.05	0.54	0.00	0.12	0.00	0.12	0.00	0.00	0.01		93.43		0.01		93.54

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.18	0.00	2.18	1.13	0.00	1.13						0.00
Off-Road	3.54	27.44	17.32	0.03		1.34	1.34		1.34	1.34	0.00	3,253.39		0.32		3,260.02
Total	3.54	27.44	17.32	0.03	2.18	1.34	3.52	1.13	1.34	2.47	0.00	3,253.39		0.32		3,260.02

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.05	0.54	0.00	0.12	0.00	0.12	0.00	0.00	0.01		93.43		0.01		93.54
Total	0.05	0.05	0.54	0.00	0.12	0.00	0.12	0.00	0.00	0.01		93.43		0.01		93.54

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.68	0.00	4.68	2.48	0.00	2.48						0.00
Off-Road	2.93	22.76	14.27	0.03		1.11	1.11		1.11	1.11		2,689.97		0.26		2,695.46
Total	2.93	22.76	14.27	0.03	4.68	1.11	5.79	2.48	1.11	3.59		2,689.97		0.26		2,695.46

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.61	66.45	28.97	0.12	41.83	2.15	43.99	0.42	2.15	2.57		12,339.87		0.27		12,345.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.05	0.54	0.00	0.12	0.00	0.12	0.00	0.00	0.01		93.43		0.01		93.54
Total	5.66	66.50	29.51	0.12	41.95	2.15	44.11	0.42	2.15	2.58		12,433.30		0.28		12,439.12

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.83	0.00	1.83	0.97	0.00	0.97						0.00

Off-Road	2.93	22.76	14.27	0.03		1.11	1.11		1.11	1.11	0.00	2,689.97		0.26		2,695.46
Total	2.93	22.76	14.27	0.03	1.83	1.11	2.94	0.97	1.11	2.08	0.00	2,689.97		0.26		2,695.46

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.61	66.45	28.97	0.12	41.83	2.15	43.99	0.42	2.15	2.57		12,339.87		0.27		12,345.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.05	0.54	0.00	0.12	0.00	0.12	0.00	0.00	0.01		93.43		0.01		93.54
Total	5.66	66.50	29.51	0.12	41.95	2.15	44.11	0.42	2.15	2.58		12,433.30		0.28		12,439.12

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.78	20.14	15.61	0.03		1.31	1.31		1.31	1.31		2,561.58		0.34		2,568.69
Total	3.78	20.14	15.61	0.03		1.31	1.31		1.31	1.31		2,561.58		0.34		2,568.69

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.83	9.99	5.12	0.02	0.65	0.29	0.95	0.05	0.29	0.34		1,947.42		0.04		1,948.26
Worker	3.22	2.97	32.42	0.06	7.19	0.21	7.41	0.27	0.21	0.48		5,605.61		0.31		5,612.19
Total	4.05	12.96	37.54	0.08	7.84	0.50	8.36	0.32	0.50	0.82		7,553.03		0.35		7,560.45

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.78	20.14	15.61	0.03		1.31	1.31		1.31	1.31	0.00	2,561.58		0.34		2,568.69
Total	3.78	20.14	15.61	0.03		1.31	1.31		1.31	1.31	0.00	2,561.58		0.34		2,568.69

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.83	9.99	5.12	0.02	0.65	0.29	0.95	0.05	0.29	0.34		1,947.42		0.04		1,948.26
Worker	3.22	2.97	32.42	0.06	7.19	0.21	7.41	0.27	0.21	0.48		5,605.61		0.31		5,612.19
Total	4.05	12.96	37.54	0.08	7.84	0.50	8.36	0.32	0.50	0.82		7,553.03		0.35		7,560.45

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.43	18.67	15.34	0.03		1.17	1.17		1.17	1.17		2,561.58		0.31		2,568.03
Total	3.43	18.67	15.34	0.03		1.17	1.17		1.17	1.17		2,561.58		0.31		2,568.03

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.77	9.18	4.78	0.02	0.65	0.26	0.92	0.05	0.26	0.31		1,949.02		0.04		1,949.81
Worker	3.01	2.72	29.96	0.06	7.19	0.22	7.42	0.27	0.22	0.49		5,567.06		0.30		5,573.30
Total	3.78	11.90	34.74	0.08	7.84	0.48	8.34	0.32	0.48	0.80		7,516.08		0.34		7,523.11

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.43	18.67	15.34	0.03		1.17	1.17		1.17	1.17	0.00	2,561.58		0.31		2,568.03
Total	3.43	18.67	15.34	0.03		1.17	1.17		1.17	1.17	0.00	2,561.58		0.31		2,568.03

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.77	9.18	4.78	0.02	0.65	0.26	0.92	0.05	0.26	0.31		1,949.02		0.04		1,949.81
Worker	3.01	2.72	29.96	0.06	7.19	0.22	7.42	0.27	0.22	0.49		5,567.06		0.30		5,573.30
Total	3.78	11.90	34.74	0.08	7.84	0.48	8.34	0.32	0.48	0.80		7,516.08		0.34		7,523.11

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	65.06					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	65.43	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.60	0.54	5.99	0.01	1.44	0.04	1.48	0.05	0.04	0.10		1,113.41		0.06		1,114.66
Total	0.60	0.54	5.99	0.01	1.44	0.04	1.48	0.05	0.04	0.10		1,113.41		0.06		1,114.66

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	65.06					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	65.43	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.60	0.54	5.99	0.01	1.44	0.04	1.48	0.05	0.04	0.10		1,113.41		0.06		1,114.66
Total	0.60	0.54	5.99	0.01	1.44	0.04	1.48	0.05	0.04	0.10		1,113.41		0.06		1,114.66

3.7 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.44	15.28	11.80	0.02		1.23	1.23		1.23	1.23		1,712.72		0.22		1,717.32

Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	2.44	15.28	11.80	0.02		1.23	1.23		1.23	1.23		1,712.72		0.22		1,717.32

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.07	0.81	0.00	0.19	0.01	0.20	0.01	0.01	0.01		150.77		0.01		150.94
Total	0.08	0.07	0.81	0.00	0.19	0.01	0.20	0.01	0.01	0.01		150.77		0.01		150.94

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.44	15.28	11.80	0.02		1.23	1.23		1.23	1.23	0.00	1,712.72		0.22		1,717.32
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	2.44	15.28	11.80	0.02		1.23	1.23		1.23	1.23	0.00	1,712.72		0.22		1,717.32

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.08	0.07	0.81	0.00	0.19	0.01	0.20	0.01	0.01	0.01	0.01	150.77		0.01		150.94
Total	0.08	0.07	0.81	0.00	0.19	0.01	0.20	0.01	0.01	0.01		150.77		0.01		150.94

**Jack London Square - 2013 Project Construction Emissions (Max. Residential Scenario)
Alameda County, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Apartments High Rise	200	Dwelling Unit
Apartments High Rise	466	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)		Utility Company
Climate Zone	5		2.2	
		Precipitation Freq (Days)		
			63	

1.3 User Entered Comments

Project Characteristics -

Land Use - Site D: 200 DU on 24,000 sf footprint

Site F2: 466 DU on 57,000 sf footprint

Construction Phase - Two-year construction schedule period for 2013 Project (Max. Residential) adjusted based on CalEEMod default schedule.

Demolition - Sites D and F2 footprints = 24,000 sf + 57,000 sf = 81,000 sf

Debris weight to area ratio = 0.046 ton/sf (from USEPA)

81,000 sf x 0.046 tons/sf = 3,726 tons

Grading - Total acreage of Sites D and F2 is 1.86 acres.

Architectural Coating - VOC limit of 150 g/L for non-flat glossy coats effective beginning January 1, 2011 under BAAQMD Rule 3 (architectural coatings). No coatings anticipated for exterior area.

Construction Off-road Equipment Mitigation - Assumes implementation of standard BMPs including daily watering and limiting speeds of construction vehicles.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.81	89.11	52.05	0.14	46.63	3.30	49.93	2.90	3.30	6.20	0.00	15,043.79	0.00	0.68	0.00	15,057.98
2016	73.54	33.70	56.41	0.11	9.28	1.90	11.19	0.37	1.90	2.28	0.00	10,724.01	0.00	0.71	0.00	10,738.98
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.81	89.11	52.05	0.14	43.78	3.30	47.07	1.39	3.30	4.69	0.00	15,043.79	0.00	0.68	0.00	15,057.98
2016	73.54	33.70	56.41	0.11	9.28	1.90	11.19	0.37	1.90	2.28	0.00	10,724.01	0.00	0.71	0.00	10,738.98
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.04	0.00	2.04	0.00	0.00	0.00						0.00
Off-Road	4.43	33.38	22.08	0.04		1.88	1.88		1.88	1.88		3,946.47		0.40		3,954.79
Total	4.43	33.38	22.08	0.04	2.04	1.88	3.92	0.00	1.88	1.88		3,946.47		0.40		3,954.79

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.37	4.22	2.13	0.01	8.59	0.14	8.73	0.03	0.14	0.17		780.57		0.02		780.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	0.81	0.00	0.19	0.01	0.20	0.01	0.01	0.01		135.17		0.01		135.34
Total	0.46	4.31	2.94	0.01	8.78	0.15	8.93	0.04	0.15	0.18		915.74		0.03		916.29

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					0.80	0.00	0.80	0.00	0.00	0.00						0.00
Off-Road	4.43	33.38	22.08	0.04		1.88	1.88		1.88	1.88	0.00	3,946.47		0.40		3,954.79
Total	4.43	33.38	22.08	0.04	0.80	1.88	2.68	0.00	1.88	1.88	0.00	3,946.47		0.40		3,954.79

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.37	4.22	2.13	0.01	8.59	0.14	8.73	0.03	0.14	0.17		780.57		0.02		780.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	0.81	0.00	0.19	0.01	0.20	0.01	0.01	0.01		135.17		0.01		135.34
Total	0.46	4.31	2.94	0.01	8.78	0.15	8.93	0.04	0.15	0.18		915.74		0.03		916.29

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.60	0.00	5.60	2.90	0.00	2.90						0.00
Off-Road	3.54	27.44	17.32	0.03		1.34	1.34		1.34	1.34		3,253.39		0.32		3,260.02
Total	3.54	27.44	17.32	0.03	5.60	1.34	6.94	2.90	1.34	4.24		3,253.39		0.32		3,260.02

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.05	0.50	0.00	0.12	0.00	0.12	0.00	0.00	0.01		83.18		0.00		83.29
Total	0.06	0.05	0.50	0.00	0.12	0.00	0.12	0.00	0.00	0.01		83.18		0.00		83.29

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.18	0.00	2.18	1.13	0.00	1.13						0.00
Off-Road	3.54	27.44	17.32	0.03		1.34	1.34		1.34	1.34	0.00	3,253.39		0.32		3,260.02
Total	3.54	27.44	17.32	0.03	2.18	1.34	3.52	1.13	1.34	2.47	0.00	3,253.39		0.32		3,260.02

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.05	0.50	0.00	0.12	0.00	0.12	0.00	0.00	0.01		83.18		0.00		83.29
Total	0.06	0.05	0.50	0.00	0.12	0.00	0.12	0.00	0.00	0.01		83.18		0.00		83.29

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.68	0.00	4.68	2.48	0.00	2.48						0.00
Off-Road	2.93	22.76	14.27	0.03		1.11	1.11		1.11	1.11		2,689.97		0.26		2,695.46
Total	2.93	22.76	14.27	0.03	4.68	1.11	5.79	2.48	1.11	3.59		2,689.97		0.26		2,695.46

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.82	66.30	33.44	0.12	41.83	2.18	44.02	0.42	2.18	2.60		12,270.64		0.28		12,276.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.05	0.50	0.00	0.12	0.00	0.12	0.00	0.00	0.01		83.18		0.00		83.29
Total	5.88	66.35	33.94	0.12	41.95	2.18	44.14	0.42	2.18	2.61		12,353.82		0.28		12,359.86

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.83	0.00	1.83	0.97	0.00	0.97						0.00

Off-Road	2.93	22.76	14.27	0.03		1.11	1.11		1.11	1.11	0.00	2,689.97		0.26		2,695.46
Total	2.93	22.76	14.27	0.03	1.83	1.11	2.94	0.97	1.11	2.08	0.00	2,689.97		0.26		2,695.46

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.82	66.30	33.44	0.12	41.83	2.18	44.02	0.42	2.18	2.60		12,270.64		0.28		12,276.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.05	0.50	0.00	0.12	0.00	0.12	0.00	0.00	0.01		83.18		0.00		83.29
Total	5.88	66.35	33.94	0.12	41.95	2.18	44.14	0.42	2.18	2.61		12,353.82		0.28		12,359.86

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.78	20.14	15.61	0.03		1.31	1.31		1.31	1.31		2,561.58		0.34		2,568.69
Total	3.78	20.14	15.61	0.03		1.31	1.31		1.31	1.31		2,561.58		0.34		2,568.69

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.90	9.91	6.38	0.02	0.65	0.30	0.95	0.05	0.30	0.35		1,930.85		0.04		1,931.76
Worker	3.43	3.27	30.07	0.05	7.19	0.21	7.41	0.27	0.21	0.48		4,991.01		0.29		4,997.18
Total	4.33	13.18	36.45	0.07	7.84	0.51	8.36	0.32	0.51	0.83		6,921.86		0.33		6,928.94

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.78	20.14	15.61	0.03		1.31	1.31		1.31	1.31	0.00	2,561.58		0.34		2,568.69
Total	3.78	20.14	15.61	0.03		1.31	1.31		1.31	1.31	0.00	2,561.58		0.34		2,568.69

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.90	9.91	6.38	0.02	0.65	0.30	0.95	0.05	0.30	0.35		1,930.85		0.04		1,931.76
Worker	3.43	3.27	30.07	0.05	7.19	0.21	7.41	0.27	0.21	0.48		4,991.01		0.29		4,997.18
Total	4.33	13.18	36.45	0.07	7.84	0.51	8.36	0.32	0.51	0.83		6,921.86		0.33		6,928.94

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.43	18.67	15.34	0.03		1.17	1.17		1.17	1.17		2,561.58		0.31		2,568.03
Total	3.43	18.67	15.34	0.03		1.17	1.17		1.17	1.17		2,561.58		0.31		2,568.03

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.83	9.09	6.01	0.02	0.65	0.27	0.92	0.05	0.27	0.32		1,932.23		0.04		1,933.08
Worker	3.21	2.98	27.65	0.05	7.19	0.22	7.42	0.27	0.22	0.49		4,957.51		0.28		4,963.33
Total	4.04	12.07	33.66	0.07	7.84	0.49	8.34	0.32	0.49	0.81		6,889.74		0.32		6,896.41

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.43	18.67	15.34	0.03		1.17	1.17		1.17	1.17	0.00	2,561.58		0.31		2,568.03
Total	3.43	18.67	15.34	0.03		1.17	1.17		1.17	1.17	0.00	2,561.58		0.31		2,568.03

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.83	9.09	6.01	0.02	0.65	0.27	0.92	0.05	0.27	0.32		1,932.23		0.04		1,933.08
Worker	3.21	2.98	27.65	0.05	7.19	0.22	7.42	0.27	0.22	0.49		4,957.51		0.28		4,963.33
Total	4.04	12.07	33.66	0.07	7.84	0.49	8.34	0.32	0.49	0.81		6,889.74		0.32		6,896.41

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	65.06					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	65.43	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.64	0.60	5.53	0.01	1.44	0.04	1.48	0.05	0.04	0.10		991.50		0.06		992.67
Total	0.64	0.60	5.53	0.01	1.44	0.04	1.48	0.05	0.04	0.10		991.50		0.06		992.67

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	65.06					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	65.43	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.64	0.60	5.53	0.01	1.44	0.04	1.48	0.05	0.04	0.10		991.50		0.06		992.67
Total	0.64	0.60	5.53	0.01	1.44	0.04	1.48	0.05	0.04	0.10		991.50		0.06		992.67

3.7 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.44	15.28	11.80	0.02		1.23	1.23		1.23	1.23		1,712.72		0.22		1,717.32

Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	2.44	15.28	11.80	0.02		1.23	1.23		1.23	1.23		1,712.72		0.22		1,717.32

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.08	0.75	0.00	0.19	0.01	0.20	0.01	0.01	0.01		134.27		0.01		134.42
Total	0.09	0.08	0.75	0.00	0.19	0.01	0.20	0.01	0.01	0.01		134.27		0.01		134.42

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.44	15.28	11.80	0.02		1.23	1.23		1.23	1.23	0.00	1,712.72		0.22		1,717.32
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	2.44	15.28	11.80	0.02		1.23	1.23		1.23	1.23	0.00	1,712.72		0.22		1,717.32

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.09	0.08	0.75	0.00	0.19	0.01	0.20	0.01	0.01	0.01	0.01	134.27		0.01		134.42
Total	0.09	0.08	0.75	0.00	0.19	0.01	0.20	0.01	0.01	0.01		134.27		0.01		134.42

**Jack London Square - 2013 Project Construction Emissions (Max. Residential Scenario)
Alameda County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Apartments High Rise	200	Dwelling Unit
Apartments High Rise	466	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)		Utility Company
Climate Zone	5		2.2	
		Precipitation Freq (Days)		
			63	

1.3 User Entered Comments

Project Characteristics -

Land Use - Site D: 200 DU on 24,000 sf footprint

Site F2: 466 DU on 57,000 sf footprint

Construction Phase - Two-year construction schedule period for 2013 Project (Max. Residential) adjusted based on CalEEMod default schedule.

Demolition - Sites D and F2 footprints = 24,000 sf + 57,000 sf = 81,000 sf

Debris weight to area ratio = 0.046 ton/sf (from USEPA)

81,000 sf x 0.046 tons/sf = 3,726 tons

Grading - Total acreage of Sites D and F2 is 1.86 acres.

Architectural Coating - VOC limit of 150 g/L for non-flat glossy coats effective beginning January 1, 2011 under BAAQMD Rule 3 (architectural coatings). No coatings anticipated for exterior area.

Construction Off-road Equipment Mitigation - Assumes implementation of standard BMPs including daily watering and limiting speeds of construction vehicles.

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.94	4.67	6.02	0.01	1.06	0.25	1.30	0.07	0.25	0.31	0.00	1,052.72	1,052.72	0.07	0.00	1,054.26
2016	5.59	3.86	6.23	0.01	0.81	0.22	1.03	0.04	0.22	0.26	0.00	1,094.19	1,094.19	0.07	0.00	1,095.72
Total	6.53	8.53	12.25	0.02	1.87	0.47	2.33	0.11	0.47	0.57	0.00	2,146.91	2,146.91	0.14	0.00	2,149.98

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.94	4.67	6.02	0.01	1.00	0.25	1.25	0.05	0.25	0.29	0.00	1,052.72	1,052.72	0.07	0.00	1,054.26
2016	5.59	3.86	6.23	0.01	0.81	0.22	1.03	0.04	0.22	0.26	0.00	1,094.19	1,094.19	0.07	0.00	1,095.72
Total	6.53	8.53	12.25	0.02	1.81	0.47	2.28	0.09	0.47	0.55	0.00	2,146.91	2,146.91	0.14	0.00	2,149.98

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.04	0.00	0.04	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.09	0.65	0.43	0.00		0.04	0.04		0.04	0.04	0.00	69.79	69.79	0.01	0.00	69.94
Total	0.09	0.65	0.43	0.00	0.04	0.04	0.08	0.01	0.04	0.05	0.00	69.79	69.79	0.01	0.00	69.94

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.08	0.04	0.00	0.13	0.00	0.14	0.00	0.00	0.00	0.00	13.85	13.85	0.00	0.00	13.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	2.42	0.00	0.00	2.42
Total	0.01	0.08	0.06	0.00	0.13	0.00	0.14	0.00	0.00	0.00	0.00	16.27	16.27	0.00	0.00	16.27

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.09	0.65	0.43	0.00			0.04	0.04		0.04	0.04	0.00	69.79	69.79	0.01	0.00
Total	0.09	0.65	0.43	0.00	0.02	0.04	0.06	0.00	0.04	0.04	0.00	69.79	69.79	0.01	0.00	69.94

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.08	0.04	0.00	0.13	0.00	0.14	0.00	0.00	0.00	0.00	13.85	13.85	0.00	0.00	13.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	2.42	0.00	0.00	2.42
Total	0.01	0.08	0.06	0.00	0.13	0.00	0.14	0.00	0.00	0.00	0.00	16.27	16.27	0.00	0.00	16.27

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.05	0.00			0.00			0.00	0.00	8.85	8.85	0.00	0.00	8.87
Total	0.01	0.08	0.05	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	8.85	8.85	0.00	0.00	8.87

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.05	0.00		0.00	0.00		0.00	0.00	0.00	8.85	8.85	0.00	0.00	8.87
Total	0.01	0.08	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	8.85	8.85	0.00	0.00	8.87

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.03	0.00	0.03	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.14	0.09	0.00		0.01	0.01		0.01	0.01	0.00	14.64	14.64	0.00	0.00	14.67
Total	0.02	0.14	0.09	0.00	0.03	0.01	0.04	0.02	0.01	0.03	0.00	14.64	14.64	0.00	0.00	14.67

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.03	0.39	0.19	0.00	0.20	0.01	0.21	0.00	0.01	0.02	0.00	66.98	66.98	0.00	0.00	67.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46	0.00	0.00	0.46
Total	0.03	0.39	0.19	0.00	0.20	0.01	0.21	0.00	0.01	0.02	0.00	67.44	67.44	0.00	0.00	67.47

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00

Off-Road	0.02	0.14	0.09	0.00		0.01	0.01		0.01	0.01	0.00	14.64	14.64	0.00	0.00	14.67
Total	0.02	0.14	0.09	0.00	0.01	0.01	0.02	0.01	0.01	0.02	0.00	14.64	14.64	0.00	0.00	14.67

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.03	0.39	0.19	0.00	0.20	0.01	0.21	0.00	0.01	0.02	0.00	66.98	66.98	0.00	0.00	67.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46	0.00	0.00	0.46
Total	0.03	0.39	0.19	0.00	0.20	0.01	0.21	0.00	0.01	0.02	0.00	67.44	67.44	0.00	0.00	67.47

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.38	2.03	1.58	0.00		0.13	0.13		0.13	0.13	0.00	234.64	234.64	0.03	0.00	235.29
Total	0.38	2.03	1.58	0.00		0.13	0.13		0.13	0.13	0.00	234.64	234.64	0.03	0.00	235.29

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.09	0.99	0.60	0.00	0.05	0.03	0.08	0.01	0.03	0.03	0.00	177.67	177.67	0.00	0.00	177.76	
Worker	0.31	0.31	3.02	0.01	0.58	0.02	0.60	0.03	0.02	0.05	0.00	463.18	463.18	0.03	0.00	463.75	
Total	0.40	1.30	3.62	0.01	0.63	0.05	0.68	0.04	0.05	0.08	0.00	640.85	640.85	0.03	0.00	641.51	

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.38	2.03	1.58	0.00		0.13	0.13		0.13	0.13	0.00	234.64	234.64	0.03	0.00	235.29
Total	0.38	2.03	1.58	0.00		0.13	0.13		0.13	0.13	0.00	234.64	234.64	0.03	0.00	235.29

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.09	0.99	0.60	0.00	0.05	0.03	0.08	0.01	0.03	0.03	0.00	177.67	177.67	0.00	0.00	177.76
Worker	0.31	0.31	3.02	0.01	0.58	0.02	0.60	0.03	0.02	0.05	0.00	463.18	463.18	0.03	0.00	463.75
Total	0.40	1.30	3.62	0.01	0.63	0.05	0.68	0.04	0.05	0.08	0.00	640.85	640.85	0.03	0.00	641.51

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.39	2.15	1.76	0.00		0.13	0.13		0.13	0.13	0.00	267.17	267.17	0.03	0.00	267.84
Total	0.39	2.15	1.76	0.00		0.13	0.13		0.13	0.13	0.00	267.17	267.17	0.03	0.00	267.84

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.09	1.03	0.64	0.00	0.06	0.03	0.09	0.01	0.03	0.04	0.00	202.46	202.46	0.00	0.00	202.54
Worker	0.33	0.32	3.17	0.01	0.66	0.03	0.69	0.03	0.03	0.06	0.00	523.84	523.84	0.03	0.00	524.45
Total	0.42	1.35	3.81	0.01	0.72	0.06	0.78	0.04	0.06	0.10	0.00	726.30	726.30	0.03	0.00	726.99

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.39	2.15	1.76	0.00		0.13	0.13		0.13	0.13	0.00	267.17	267.17	0.03	0.00	267.84
Total	0.39	2.15	1.76	0.00		0.13	0.13		0.13	0.13	0.00	267.17	267.17	0.03	0.00	267.84

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.09	1.03	0.64	0.00	0.06	0.03	0.09	0.01	0.03	0.04	0.00	202.46	202.46	0.00	0.00	202.54
Worker	0.33	0.32	3.17	0.01	0.66	0.03	0.69	0.03	0.03	0.06	0.00	523.84	523.84	0.03	0.00	524.45
Total	0.42	1.35	3.81	0.01	0.72	0.06	0.78	0.04	0.06	0.10	0.00	726.30	726.30	0.03	0.00	726.99

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.68					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.17	0.14	0.00		0.01	0.01		0.01	0.01	0.00	18.36	18.36	0.00	0.00	18.41
Total	4.71	0.17	0.14	0.00		0.01	0.01		0.01	0.01	0.00	18.36	18.36	0.00	0.00	18.41

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.04	0.04	0.40	0.00	0.08	0.00	0.09	0.00	0.00	0.01	0.00	65.59	65.59	0.00	0.00	65.67
Total	0.04	0.04	0.40	0.00	0.08	0.00	0.09	0.00	0.00	0.01	0.00	65.59	65.59	0.00	0.00	65.67

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.68					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.17	0.14	0.00		0.01	0.01		0.01	0.01	0.00	18.36	18.36	0.00	0.00	18.41
Total	4.71	0.17	0.14	0.00		0.01	0.01		0.01	0.01	0.00	18.36	18.36	0.00	0.00	18.41

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.04	0.04	0.40	0.00	0.08	0.00	0.09	0.00	0.00	0.01	0.00	65.59	65.59	0.00	0.00	65.67
Total	0.04	0.04	0.40	0.00	0.08	0.00	0.09	0.00	0.00	0.01	0.00	65.59	65.59	0.00	0.00	65.67

3.7 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.53	15.53	0.00	0.00	15.58

Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.53	15.53	0.00	0.00	15.58

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	1.23	0.00	0.00	1.24
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	1.23	0.00	0.00	1.24

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.53	15.53	0.00	0.00	15.58
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.53	15.53	0.00	0.00	15.58

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	1.23	0.00	0.00	1.24
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	1.23	0.00	0.00	1.24

**Jack London Square - 2013 Construction Emissions (Max. Commercial Scenario)
Alameda County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	90	1000sqft
General Office Building	134	1000sqft
Movie Theater (No Matinee)	41	1000sqft
Regional Shopping Center	59	1000sqft
Regional Shopping Center	15	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	Utility Company
Climate Zone	5	2.2	
		Precipitation Freq (Days)	

1.3 User Entered Comments

Project Characteristics -

Land Use - Proposed uses on Sites D and F2.

Construction Phase - Two-year construction schedule period for 2013 Project (Max. Commercial) adjusted based on CalEEMod default schedule.

Demolition - Sites D and F footprints = 24,000 sf + 57,000 sf = 81,000 sf

Debris weight to area ration = 0.046 ton/sf (from USEPA); 81,000 sf x 0.046 tons/sf = 3,726 tons

Grading - Assumes 6 ft of excavation at Sites D and F: (57,000 sf + 24,000 sf) x 6 ft = 486,000 cubic feet = 18,000 cubic yards

Architectural Coating - VOC limit of 150 g/L for non-flat glossy coats effective beginning January 1, 2011 under BAAQMD Rule 3 (architectural coatings). No coatings anticipated for exterior area.

Construction Off-road Equipment Mitigation - Anticipates implementation of standard BMPs including daily watering and limiting speeds of construction vehicles.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.97	72.56	43.77	0.11	58.91	3.30	62.14	9.94	3.30	13.24	0.00	11,087.29	0.00	0.80	0.00	11,104.15
2016	33.63	36.90	36.94	0.08	2.55	2.57	4.61	0.12	2.57	2.59	0.00	7,436.40	0.00	0.50	0.00	7,446.97
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.97	72.56	43.77	0.11	55.16	3.30	58.39	3.88	3.30	7.18	0.00	11,087.29	0.00	0.80	0.00	11,104.15
2016	33.63	36.90	36.94	0.08	2.55	2.57	4.61	0.12	2.57	2.59	0.00	7,436.40	0.00	0.50	0.00	7,446.97
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					2.42	0.00	2.42	0.00	0.00	0.00							0.00
Off-Road	7.90	60.98	39.63	0.07		2.92	2.92		2.92	2.92		7,510.81		0.71			7,525.67
Total	7.90	60.98	39.63	0.07	2.42	2.92	5.34	0.00	2.92	2.92		7,510.81		0.71			7,525.67

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.42	5.00	2.18	0.01	8.59	0.16	8.76	0.03	0.16	0.19		927.70		0.02			928.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00			0.00
Worker	0.10	0.09	1.01	0.00	0.22	0.01	0.23	0.01	0.01	0.02		175.18		0.01			175.38
Total	0.52	5.09	3.19	0.01	8.81	0.17	8.99	0.04	0.17	0.21		1,102.88		0.03			1,103.50

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.94	0.00	0.94	0.00	0.00	0.00						0.00
Off-Road	7.90	60.98	39.63	0.07		2.92	2.92		2.92	2.92	0.00	7,510.81		0.71		7,525.67
Total	7.90	60.98	39.63	0.07	0.94	2.92	3.86	0.00	2.92	2.92	0.00	7,510.81		0.71		7,525.67

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.42	5.00	2.18	0.01	8.59	0.16	8.76	0.03	0.16	0.19		927.70		0.02		928.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	1.01	0.00	0.22	0.01	0.23	0.01	0.01	0.02		175.18		0.01		175.38
Total	0.52	5.09	3.19	0.01	8.81	0.17	8.99	0.04	0.17	0.21		1,102.88		0.03		1,103.50

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.18	0.00	18.18	9.93	0.00	9.93						0.00
Off-Road	8.85	69.73	40.95	0.07		3.29	3.29		3.29	3.29		7,997.69		0.79		8,014.30
Total	8.85	69.73	40.95	0.07	18.18	3.29	21.47	9.93	3.29	13.22		7,997.69		0.79		8,014.30

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.11	1.22	0.00	0.27	0.01	0.28	0.01	0.01	0.02		210.21		0.01		210.46
Total	0.12	0.11	1.22	0.00	0.27	0.01	0.28	0.01	0.01	0.02		210.21		0.01		210.46

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.09	0.00	7.09	3.87	0.00	3.87						0.00
Off-Road	8.85	69.73	40.95	0.07		3.29	3.29		3.29	3.29	0.00	7,997.69		0.79		8,014.30
Total	8.85	69.73	40.95	0.07	7.09	3.29	10.38	3.87	3.29	7.16	0.00	7,997.69		0.79		8,014.30

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Worker	0.12	0.11	1.22	0.00	0.27	0.01	0.28	0.01	0.01	0.02		210.21		0.01		210.46
Total	0.12	0.11	1.22	0.00	0.27	0.01	0.28	0.01	0.01	0.02		210.21		0.01		210.46

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					6.14	0.00	6.14	3.32	0.00	3.32							0.00
Off-Road	5.59	41.92	29.44	0.05		2.23	2.23		2.23	2.23		5,240.06		0.50			5,250.58
Total	5.59	41.92	29.44	0.05	6.14	2.23	8.37	3.32	2.23	5.55		5,240.06		0.50			5,250.58

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.58	30.55	13.32	0.05	52.54	0.99	53.53	0.19	0.99	1.18		5,672.05		0.12		5,674.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	1.01	0.00	0.22	0.01	0.23	0.01	0.01	0.02		175.18		0.01		175.38
Total	2.68	30.64	14.33	0.05	52.76	1.00	53.76	0.20	1.00	1.20		5,847.23		0.13		5,850.06

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
Fugitive Dust					2.40	0.00	2.40	1.29	0.00	1.29						0.00
Off-Road	5.59	41.92	29.44	0.05		2.23	2.23		2.23	2.23	0.00	5,240.06		0.50		5,250.58
Total	5.59	41.92	29.44	0.05	2.40	2.23	4.63	1.29	2.23	3.52	0.00	5,240.06		0.50		5,250.58

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.58	30.55	13.32	0.05	52.54	0.99	53.53	0.19	0.99	1.18		5,672.05		0.12		5,674.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	1.01	0.00	0.22	0.01	0.23	0.01	0.01	0.02		175.18		0.01		175.38
Total	2.68	30.64	14.33	0.05	52.76	1.00	53.76	0.20	1.00	1.20		5,847.23		0.13		5,850.06

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80		4,040.61		0.39		4,048.81
Total	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80		4,040.61		0.39		4,048.81

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.88	4.03	0.01	0.52	0.23	0.75	0.04	0.23	0.27		1,535.99		0.03		1,536.66
Worker	0.76	0.70	7.63	0.01	1.69	0.05	1.74	0.06	0.05	0.11		1,319.65		0.07		1,321.20
Total	1.42	8.58	11.66	0.02	2.21	0.28	2.49	0.10	0.28	0.38		2,855.64		0.10		2,857.86

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80	0.00	4,040.61		0.39		4,048.81
Total	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80	0.00	4,040.61		0.39		4,048.81

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.88	4.03	0.01	0.52	0.23	0.75	0.04	0.23	0.27		1,535.99		0.03		1,536.66
Worker	0.76	0.70	7.63	0.01	1.69	0.05	1.74	0.06	0.05	0.11		1,319.65		0.07		1,321.20
Total	1.42	8.58	11.66	0.02	2.21	0.28	2.49	0.10	0.28	0.38		2,855.64		0.10		2,857.86

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58		4,040.61		0.36		4,048.10
Total	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58		4,040.61		0.36		4,048.10

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.61	7.24	3.77	0.01	0.52	0.21	0.72	0.04	0.21	0.25		1,537.26		0.03		1,537.87
Worker	0.71	0.64	7.05	0.01	1.69	0.05	1.75	0.06	0.05	0.12		1,310.58		0.07		1,312.05
Total	1.32	7.88	10.82	0.02	2.21	0.26	2.47	0.10	0.26	0.37		2,847.84		0.10		2,849.92

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58	0.00	4,040.61		0.36		4,048.10
Total	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58	0.00	4,040.61		0.36		4,048.10

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.61	7.24	3.77	0.01	0.52	0.21	0.72	0.04	0.21	0.25		1,537.26		0.03		1,537.87
Worker	0.71	0.64	7.05	0.01	1.69	0.05	1.75	0.06	0.05	0.12		1,310.58		0.07		1,312.05
Total	1.32	7.88	10.82	0.02	2.21	0.26	2.47	0.10	0.26	0.37		2,847.84		0.10		2,849.92

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	28.18	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.14	0.13	1.44	0.00	0.34	0.01	0.36	0.01	0.01	0.02		266.76		0.01		267.05
Total	0.14	0.13	1.44	0.00	0.34	0.01	0.36	0.01	0.01	0.02		266.76		0.01		267.05

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	28.18	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.14	0.13	1.44	0.00	0.34	0.01	0.36	0.01	0.01	0.02		266.76		0.01		267.05
Total	0.14	0.13	1.44	0.00	0.34	0.01	0.36	0.01	0.01	0.02		266.76		0.01		267.05

3.7 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35		2,917.64		0.41		2,926.29
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35		2,917.64		0.41		2,926.29

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.08	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		173.97		0.01		174.17
Total	0.09	0.08	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		173.97		0.01		174.17

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35	0.00	2,917.64		0.41		2,926.29
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35	0.00	2,917.64		0.41		2,926.29

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.08	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		173.97		0.01		174.17
Total	0.09	0.08	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		173.97		0.01		174.17

**Jack London Square - 2013 Construction Emissions (Max. Commercial Scenario)
Alameda County, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	90	1000sqft
General Office Building	134	1000sqft
Movie Theater (No Matinee)	41	1000sqft
Regional Shopping Center	59	1000sqft
Regional Shopping Center	15	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)		Utility Company
Climate Zone	5		2.2	
		Precipitation Freq (Days)		
			63	

1.3 User Entered Comments

Project Characteristics -

Land Use - Proposed uses on Sites D and F2.

Construction Phase - Two-year construction schedule period for 2013 Project (Max. Commercial) adjusted based on CalEEMod default schedule.

Demolition - Sites D and F footprints = 24,000 sf + 57,000 sf = 81,000 sf

Debris weight to area ration = 0.046 ton/sf (from USEPA); 81,000 sf x 0.046 tons/sf = 3,726 tons

Grading - Assumes 6 ft of excavation at Sites D and F: (57,000 sf + 24,000 sf) x 6 ft = 486,000 cubic feet = 18,000 cubic yards

Architectural Coating - VOC limit of 150 g/L for non-flat glossy coats effective beginning January 1, 2011 under BAAQMD Rule 3 (architectural coatings). No coatings anticipated for exterior area.

Construction Off-road Equipment Mitigation - Anticipates implementation of standard BMPs including daily watering and limiting speeds of construction vehicles.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.98	72.50	45.75	0.11	58.91	3.30	62.15	9.94	3.30	13.24	0.00	11,036.27	0.00	0.80	0.00	11,053.11
2016	33.74	36.91	37.26	0.08	2.55	2.57	4.61	0.12	2.57	2.59	0.00	7,250.45	0.00	0.50	0.00	7,260.95
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.98	72.50	45.75	0.11	55.16	3.30	58.40	3.88	3.30	7.18	0.00	11,036.27	0.00	0.80	0.00	11,053.11
2016	33.74	36.91	37.26	0.08	2.55	2.57	4.61	0.12	2.57	2.59	0.00	7,250.45	0.00	0.50	0.00	7,260.95
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.42	0.00	2.42	0.00	0.00	0.00						0.00
Off-Road	7.90	60.98	39.63	0.07		2.92	2.92		2.92	2.92		7,510.81		0.71		7,525.67
Total	7.90	60.98	39.63	0.07	2.42	2.92	5.34	0.00	2.92	2.92		7,510.81		0.71		7,525.67

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.44	4.98	2.51	0.01	8.59	0.16	8.76	0.03	0.16	0.20		922.49		0.02		922.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.10	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		155.97		0.01		156.16
Total	0.55	5.08	3.45	0.01	8.81	0.17	8.99	0.04	0.17	0.22		1,078.46		0.03		1,079.10

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.94	0.00	0.94	0.00	0.00	0.00						0.00
Off-Road	7.90	60.98	39.63	0.07		2.92	2.92		2.92	2.92	0.00	7,510.81		0.71		7,525.67
Total	7.90	60.98	39.63	0.07	0.94	2.92	3.86	0.00	2.92	2.92	0.00	7,510.81		0.71		7,525.67

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.44	4.98	2.51	0.01	8.59	0.16	8.76	0.03	0.16	0.20		922.49		0.02		922.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.10	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		155.97		0.01		156.16
Total	0.55	5.08	3.45	0.01	8.81	0.17	8.99	0.04	0.17	0.22		1,078.46		0.03		1,079.10

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.18	0.00	18.18	9.93	0.00	9.93						0.00
Off-Road	8.85	69.73	40.95	0.07		3.29	3.29		3.29	3.29		7,997.69		0.79		8,014.30
Total	8.85	69.73	40.95	0.07	18.18	3.29	21.47	9.93	3.29	13.22		7,997.69		0.79		8,014.30

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.12	1.13	0.00	0.27	0.01	0.28	0.01	0.01	0.02		187.16		0.01		187.39
Total	0.13	0.12	1.13	0.00	0.27	0.01	0.28	0.01	0.01	0.02		187.16		0.01		187.39

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.09	0.00	7.09	3.87	0.00	3.87						0.00
Off-Road	8.85	69.73	40.95	0.07		3.29	3.29		3.29	3.29	0.00	7,997.69		0.79		8,014.30
Total	8.85	69.73	40.95	0.07	7.09	3.29	10.38	3.87	3.29	7.16	0.00	7,997.69		0.79		8,014.30

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Worker	0.13	0.12	1.13	0.00	0.27	0.01	0.28	0.01	0.01	0.02		187.16		0.01		187.39
Total	0.13	0.12	1.13	0.00	0.27	0.01	0.28	0.01	0.01	0.02		187.16		0.01		187.39

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					6.14	0.00	6.14	3.32	0.00	3.32							0.00
Off-Road	5.59	41.92	29.44	0.05		2.23	2.23		2.23	2.23			5,240.06	0.50			5,250.58
Total	5.59	41.92	29.44	0.05	6.14	2.23	8.37	3.32	2.23	5.55			5,240.06	0.50			5,250.58

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	2.67	30.47	15.37	0.05	52.54	1.00	53.55	0.19	1.00	1.20			5,640.23	0.13			5,642.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00			0.00
Worker	0.11	0.10	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02			155.97	0.01			156.16
Total	2.78	30.57	16.31	0.05	52.76	1.01	53.78	0.20	1.01	1.22			5,796.20	0.14			5,799.12

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					2.40	0.00	2.40	1.29	0.00	1.29						0.00
Off-Road	5.59	41.92	29.44	0.05		2.23	2.23		2.23	2.23	0.00	5,240.06		0.50		5,250.58
Total	5.59	41.92	29.44	0.05	2.40	2.23	4.63	1.29	2.23	3.52	0.00	5,240.06		0.50		5,250.58

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.67	30.47	15.37	0.05	52.54	1.00	53.55	0.19	1.00	1.20		5,640.23		0.13		5,642.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.10	0.94	0.00	0.22	0.01	0.23	0.01	0.01	0.02		155.97		0.01		156.16
Total	2.78	30.57	16.31	0.05	52.76	1.01	53.78	0.20	1.01	1.22		5,796.20		0.14		5,799.12

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80		4,040.61		0.39		4,048.81
Total	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80		4,040.61		0.39		4,048.81

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.71	7.82	5.03	0.01	0.52	0.24	0.75	0.04	0.24	0.28		1,522.92		0.03		1,523.64
Worker	0.81	0.77	7.08	0.01	1.69	0.05	1.74	0.06	0.05	0.11		1,174.97		0.07		1,176.42
Total	1.52	8.59	12.11	0.02	2.21	0.29	2.49	0.10	0.29	0.39		2,697.89		0.10		2,700.06

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80	0.00	4,040.61		0.39		4,048.81
Total	4.34	29.16	22.98	0.04		1.80	1.80		1.80	1.80	0.00	4,040.61		0.39		4,048.81

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.71	7.82	5.03	0.01	0.52	0.24	0.75	0.04	0.24	0.28		1,522.92		0.03		1,523.64
Worker	0.81	0.77	7.08	0.01	1.69	0.05	1.74	0.06	0.05	0.11		1,174.97		0.07		1,176.42
Total	1.52	8.59	12.11	0.02	2.21	0.29	2.49	0.10	0.29	0.39		2,697.89		0.10		2,700.06

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58		4,040.61		0.36		4,048.10
Total	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58		4,040.61		0.36		4,048.10

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.17	4.74	0.01	0.52	0.21	0.73	0.04	0.21	0.25		1,524.02		0.03		1,524.68
Worker	0.76	0.70	6.51	0.01	1.69	0.05	1.75	0.06	0.05	0.12		1,167.08		0.07		1,168.45
Total	1.42	7.87	11.25	0.02	2.21	0.26	2.48	0.10	0.26	0.37		2,691.10		0.10		2,693.13

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58	0.00	4,040.61		0.36		4,048.10
Total	3.99	26.52	22.80	0.04		1.58	1.58		1.58	1.58	0.00	4,040.61		0.36		4,048.10

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.17	4.74	0.01	0.52	0.21	0.73	0.04	0.21	0.25		1,524.02		0.03		1,524.68
Worker	0.76	0.70	6.51	0.01	1.69	0.05	1.75	0.06	0.05	0.12		1,167.08		0.07		1,168.45
Total	1.42	7.87	11.25	0.02	2.21	0.26	2.48	0.10	0.26	0.37		2,691.10		0.10		2,693.13

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	28.18	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.15	0.14	1.32	0.00	0.34	0.01	0.36	0.01	0.01	0.02		237.55		0.01		237.83
Total	0.15	0.14	1.32	0.00	0.34	0.01	0.36	0.01	0.01	0.02		237.55		0.01		237.83

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	28.18	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.14	1.32	0.00	0.34	0.01	0.36	0.01	0.01	0.02		237.55		0.01		237.83
Total	0.15	0.14	1.32	0.00	0.34	0.01	0.36	0.01	0.01	0.02		237.55		0.01		237.83

3.7 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35		2,917.64		0.41		2,926.29
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35		2,917.64		0.41		2,926.29

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	0.86	0.00	0.22	0.01	0.23	0.01	0.01	0.02		154.92		0.01		155.10
Total	0.10	0.09	0.86	0.00	0.22	0.01	0.23	0.01	0.01	0.02		154.92		0.01		155.10

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35	0.00	2,917.64		0.41		2,926.29
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	4.58	28.21	20.38	0.03		2.35	2.35		2.35	2.35	0.00	2,917.64		0.41		2,926.29

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.09	0.86	0.00	0.22	0.01	0.23	0.01	0.01	0.02		154.92		0.01		155.10
Total	0.10	0.09	0.86	0.00	0.22	0.01	0.23	0.01	0.01	0.02		154.92		0.01		155.10

Grading - Assumes 6 ft of excavation at Sites D and F: (57,000 sf + 24,000 sf) x 6 ft = 486,000 cubic feet = 18,000 cubic yards

Architectural Coating - VOC limit of 150 g/L for non-flat glossy coats effective beginning January 1, 2011 under BAAQMD Rule 3 (architectural coatings). No coatings anticipated for exterior area.

Construction Off-road Equipment Mitigation - Anticipates implementation of standard BMPs including daily watering and limiting speeds of construction vehicles.

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.86	6.17	4.86	0.01	1.26	0.32	1.58	0.16	0.32	0.47	0.00	896.76	896.76	0.07	0.00	898.14
2016	2.42	4.12	3.99	0.01	0.20	0.24	0.44	0.01	0.24	0.25	0.00	700.87	700.87	0.05	0.00	701.93
Total	3.28	10.29	8.85	0.02	1.46	0.56	2.02	0.17	0.56	0.72	0.00	1,597.63	1,597.63	0.12	0.00	1,600.07

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.86	6.17	4.86	0.01	1.08	0.32	1.39	0.07	0.32	0.39	0.00	896.76	896.76	0.07	0.00	898.14
2016	2.42	4.12	3.99	0.01	0.20	0.24	0.44	0.01	0.24	0.25	0.00	700.87	700.87	0.05	0.00	701.93
Total	3.28	10.29	8.85	0.02	1.28	0.56	1.83	0.08	0.56	0.64	0.00	1,597.63	1,597.63	0.12	0.00	1,600.07

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.04	0.00	0.04	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.13	1.01	0.65	0.00		0.05	0.05		0.05	0.05	0.00	112.40	112.40	0.01	0.00	112.62
Total	0.13	1.01	0.65	0.00	0.04	0.05	0.09	0.01	0.05	0.06	0.00	112.40	112.40	0.01	0.00	112.62

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.08	0.04	0.00	0.11	0.00	0.12	0.00	0.00	0.00	0.00	13.85	13.85	0.00	0.00	13.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.37
Total	0.01	0.08	0.06	0.00	0.11	0.00	0.12	0.00	0.00	0.00	0.00	16.21	16.21	0.00	0.00	16.22

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.13	1.01	0.65	0.00		0.05	0.05		0.05	0.05	0.00	112.40	112.40	0.01	0.00	112.62
Total	0.13	1.01	0.65	0.00	0.02	0.05	0.07	0.00	0.05	0.05	0.00	112.40	112.40	0.01	0.00	112.62

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.08	0.04	0.00	0.11	0.00	0.12	0.00	0.00	0.00	0.00	13.85	13.85	0.00	0.00	13.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.37
Total	0.01	0.08	0.06	0.00	0.11	0.00	0.12	0.00	0.00	0.00	0.00	16.21	16.21	0.00	0.00	16.22

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.15	0.00	0.15	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.08	0.59	0.35	0.00		0.03	0.03		0.03	0.03	0.00	61.65	61.65	0.01	0.00	61.78
Total	0.08	0.59	0.35	0.00	0.15	0.03	0.18	0.08	0.03	0.11	0.00	61.65	61.65	0.01	0.00	61.78

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.46	0.00	0.00	1.46
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.46	0.00	0.00	1.46

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.06	0.00	0.06	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.08	0.59	0.35	0.00		0.03	0.03		0.03	0.03	0.00	61.65	61.65	0.01	0.00	61.78
Total	0.08	0.59	0.35	0.00	0.06	0.03	0.09	0.03	0.03	0.06	0.00	61.65	61.65	0.01	0.00	61.78

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.46	0.00	0.00	1.46
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.46	0.00	0.00	1.46

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.10	0.00	0.10	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.09	0.69	0.49	0.00		0.04	0.04		0.04	0.04	0.00	78.41	78.41	0.01	0.00	78.57
Total	0.09	0.69	0.49	0.00	0.10	0.04	0.14	0.05	0.04	0.09	0.00	78.41	78.41	0.01	0.00	78.57

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.04	0.49	0.24	0.00	0.69	0.02	0.70	0.00	0.02	0.02	0.00	84.66	84.66	0.00	0.00	84.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.37
Total	0.04	0.49	0.26	0.00	0.69	0.02	0.70	0.00	0.02	0.02	0.00	87.02	87.02	0.00	0.00	87.07

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Fugitive Dust					0.04	0.00	0.04	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.09	0.69	0.49	0.00		0.04	0.04		0.04	0.04	0.00	78.41	78.41	0.01	0.00	78.57
Total	0.09	0.69	0.49	0.00	0.04	0.04	0.08	0.02	0.04	0.06	0.00	78.41	78.41	0.01	0.00	78.57

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.04	0.49	0.24	0.00	0.69	0.02	0.70	0.00	0.02	0.02	0.00	84.66	84.66	0.00	0.00	84.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.37
Total	0.04	0.49	0.26	0.00	0.69	0.02	0.70	0.00	0.02	0.02	0.00	87.02	87.02	0.00	0.00	87.07

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.38	2.56	2.02	0.00		0.16	0.16		0.16	0.16	0.00	322.48	322.48	0.03	0.00	323.14
Total	0.38	2.56	2.02	0.00		0.16	0.16		0.16	0.16	0.00	322.48	322.48	0.03	0.00	323.14

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.68	0.41	0.00	0.04	0.02	0.06	0.00	0.02	0.02	0.00	122.10	122.10	0.00	0.00	122.16
Worker	0.06	0.06	0.62	0.00	0.12	0.00	0.12	0.01	0.00	0.01	0.00	95.01	95.01	0.01	0.00	95.12
Total	0.12	0.74	1.03	0.00	0.16	0.02	0.18	0.01	0.02	0.03	0.00	217.11	217.11	0.01	0.00	217.28

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.38	2.56	2.02	0.00		0.16	0.16		0.16	0.16	0.00	322.48	322.48	0.03	0.00	323.14
Total	0.38	2.56	2.02	0.00		0.16	0.16		0.16	0.16	0.00	322.48	322.48	0.03	0.00	323.14

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.68	0.41	0.00	0.04	0.02	0.06	0.00	0.02	0.02	0.00	122.10	122.10	0.00	0.00	122.16
Worker	0.06	0.06	0.62	0.00	0.12	0.00	0.12	0.01	0.00	0.01	0.00	95.01	95.01	0.01	0.00	95.12
Total	0.12	0.74	1.03	0.00	0.16	0.02	0.18	0.01	0.02	0.03	0.00	217.11	217.11	0.01	0.00	217.28

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.41	2.70	2.33	0.00		0.16	0.16		0.16	0.16	0.00	373.79	373.79	0.03	0.00	374.48
Total	0.41	2.70	2.33	0.00		0.16	0.16		0.16	0.16	0.00	373.79	373.79	0.03	0.00	374.48

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.07	0.72	0.45	0.00	0.04	0.02	0.06	0.00	0.02	0.03	0.00	141.63	141.63	0.00	0.00	141.69
Worker	0.07	0.07	0.66	0.00	0.14	0.01	0.14	0.01	0.01	0.01	0.00	109.38	109.38	0.01	0.00	109.51
Total	0.14	0.79	1.11	0.00	0.18	0.03	0.20	0.01	0.03	0.04	0.00	251.01	251.01	0.01	0.00	251.20

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.41	2.70	2.33	0.00		0.16	0.16		0.16	0.16	0.00	373.79	373.79	0.03	0.00	374.48
Total	0.41	2.70	2.33	0.00		0.16	0.16		0.16	0.16	0.00	373.79	373.79	0.03	0.00	374.48

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.07	0.72	0.45	0.00	0.04	0.02	0.06	0.00	0.02	0.03	0.00	141.63	141.63	0.00	0.00	141.69
Worker	0.07	0.07	0.66	0.00	0.14	0.01	0.14	0.01	0.01	0.01	0.00	109.38	109.38	0.01	0.00	109.51
Total	0.14	0.79	1.11	0.00	0.18	0.03	0.20	0.01	0.03	0.04	0.00	251.01	251.01	0.01	0.00	251.20

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.77					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.19	16.19	0.00	0.00	16.23
Total	1.79	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.19	16.19	0.00	0.00	16.23

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.86	13.86	0.00	0.00	13.88
Total	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.86	13.86	0.00	0.00	13.88

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.77					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.19	16.19	0.00	0.00	16.23
Total	1.79	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.19	16.19	0.00	0.00	16.23

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.86	13.86	0.00	0.00	13.88
Total	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.86	13.86	0.00	0.00	13.88

3.7 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.08	0.47	0.34	0.00		0.04	0.04		0.04	0.04	0.00	43.66	43.66	0.01	0.00	43.79
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.08	0.47	0.34	0.00		0.04	0.04		0.04	0.04	0.00	43.66	43.66	0.01	0.00	43.79

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	2.35	0.00	0.00	2.35
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	2.35	0.00	0.00	2.35

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.08	0.47	0.34	0.00		0.04	0.04		0.04	0.04	0.00	43.66	43.66	0.01	0.00	43.79
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.08	0.47	0.34	0.00		0.04	0.04		0.04	0.04	0.00	43.66	43.66	0.01	0.00	43.79

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	2.35	0.00	0.00	2.35
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	2.35	0.00	0.00	2.35

Jack London Square - 2004 Project Operational Emissions Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	386.30	1000sqft	8.87	386,300.00	0
Hotel	250.00	Room	8.33	363,000.00	0
Movie Theater (No Matinee)	41.00	1000sqft	0.94	41,000.00	0
Quality Restaurant	15.00	1000sqft	0.34	15,000.00	0
Regional Shopping Center	323.40	1000sqft	7.42	323,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Trip generation rates for 2004 Project with incorporation of mode split and internal capture.

Area Coating - No reapplicaton of architectural coatings for building exteriors would be required.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00

tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	ReapplicationRatePercent	10	3
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	2.37	1.37
tblVehicleTrips	ST_TR	8.19	5.19
tblVehicleTrips	ST_TR	80.00	23.12
tblVehicleTrips	ST_TR	94.36	25.72
tblVehicleTrips	ST_TR	49.97	39.52
tblVehicleTrips	SU_TR	0.98	0.57
tblVehicleTrips	SU_TR	5.95	3.77
tblVehicleTrips	SU_TR	80.00	23.12
tblVehicleTrips	SU_TR	72.16	19.67
tblVehicleTrips	SU_TR	25.24	19.96
tblVehicleTrips	WD_TR	11.01	6.37
tblVehicleTrips	WD_TR	8.17	5.18
tblVehicleTrips	WD_TR	80.00	23.12
tblVehicleTrips	WD_TR	89.95	24.52
tblVehicleTrips	WD_TR	42.94	33.96

2.0 Emissions Summary

2.2 Overall Operational Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Energy	0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579

Mobile	75.6865	71.8986	315.5563	1.1384	70.5301	1.7611	72.2912	18.9028	1.6243	20.5271		82,984.07 93	82,984.07 93	1.9194		83,024.38 75
Total	101.6096	79.0995	321.7074	1.1816	70.5301	2.3086	72.8388	18.9028	2.1719	21.0747		91,624.27 80	91,624.27 80	2.0856	0.1584	91,717.17 97

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Energy	0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579
Mobile	75.6865	71.8986	315.5563	1.1384	70.5301	1.7611	72.2912	18.9028	1.6243	20.5271		82,984.0793	82,984.0793	1.9194		83,024.3875
Total	101.6096	79.0995	321.7074	1.1816	70.5301	2.3086	72.8388	18.9028	2.1719	21.0747		91,624.2780	91,624.2780	2.0856	0.1584	91,717.1797

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	75.6865	71.8986	315.5563	1.1384	70.5301	1.7611	72.2912	18.9028	1.6243	20.5271		82,984.0793	82,984.0793	1.9194		83,024.3875

Unmitigated	75.6865	71.8986	315.5563	1.1384	70.5301	1.7611	72.2912	18.9028	1.6243	20.5271		82,984.07	82,984.07	1.9194		83,024.38
												93	93			75

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	2,460.73	529.23	220.19	4,456,233	4,456,233
Hotel	1,295.00	1,297.50	942.50	2,365,414	2,365,414
Movie Theater (No Matinee)	947.92	947.92	947.92	1,784,931	1,784,931
Quality Restaurant	367.80	385.80	295.05	426,995	426,995
Regional Shopping Center	10,982.66	12,780.77	6455.06	18,572,295	18,572,295
Total	16,054.12	15,941.22	8,860.73	27,605,867	27,605,867

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00	66	17	17
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579
NaturalGas Unmitigated	0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Movie Theater (No Matinee)	2884.6	0.0311	0.2828	0.2376	1.7000e-003		0.0215	0.0215		0.0215	0.0215		339.3650	339.3650	6.5000e-003	6.2200e-003	341.4304
Quality Restaurant	6986.71	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	4252.93	0.0459	0.4170	0.3502	2.5000e-003		0.0317	0.0317		0.0317	0.0317		500.3449	500.3449	9.5900e-003	9.1700e-003	503.3899
General Office Building	21474	0.2316	2.1053	1.7685	0.0126		0.1600	0.1600		0.1600	0.1600		2,526.3584	2,526.3584	0.0484	0.0463	2,541.7334
Hotel	37841.5	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Total		0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Movie Theater (No Matinee)	2.8846	0.0311	0.2828	0.2376	1.7000e-003		0.0215	0.0215		0.0215	0.0215		339.3650	339.3650	6.5000e-003	6.2200e-003	341.4304

Quality Restaurant	6.98671	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	4.25293	0.0459	0.4170	0.3502	2.5000e-003		0.0317	0.0317		0.0317	0.0317		500.3449	500.3449	9.5900e-003	9.1700e-003	503.3899
General Office Building	21.474	0.2316	2.1053	1.7685	0.0126		0.1600	0.1600		0.1600	0.1600		2,526.3584	2,526.3584	0.0484	0.0463	2,541.7334
Hotel	37.8415	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Total		0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Mitigated	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004			0.2343
Unmitigated	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004			0.2343

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	0.9675					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000	
Consumer Products	24.1542					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000	
Landscaping	9.4300e-003	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004			0.2343

Total	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
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Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9675					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1542					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.4300e-003	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Total	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Jack London Square - 2004 Project Operational Emissions Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	386.30	1000sqft	8.87	386,300.00	0
Hotel	250.00	Room	8.33	363,000.00	0
Movie Theater (No Matinee)	41.00	1000sqft	0.94	41,000.00	0
Quality Restaurant	15.00	1000sqft	0.34	15,000.00	0
Regional Shopping Center	323.40	1000sqft	7.42	323,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Trip generation rates for 2004 Project with incorporation of mode split and internal capture.

Area Coating - No reapplicaton of architectural coatings for building exteriors would be required.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00

tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	ReapplicationRatePercent	10	3
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	2.37	1.37
tblVehicleTrips	ST_TR	8.19	5.19
tblVehicleTrips	ST_TR	80.00	23.12
tblVehicleTrips	ST_TR	94.36	25.72
tblVehicleTrips	ST_TR	49.97	39.52
tblVehicleTrips	SU_TR	0.98	0.57
tblVehicleTrips	SU_TR	5.95	3.77
tblVehicleTrips	SU_TR	80.00	23.12
tblVehicleTrips	SU_TR	72.16	19.67
tblVehicleTrips	SU_TR	25.24	19.96
tblVehicleTrips	WD_TR	11.01	6.37
tblVehicleTrips	WD_TR	8.17	5.18
tblVehicleTrips	WD_TR	80.00	23.12
tblVehicleTrips	WD_TR	89.95	24.52
tblVehicleTrips	WD_TR	42.94	33.96

2.0 Emissions Summary

2.2 Overall Operational Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Energy	0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579

Mobile	89.1393	77.8110	422.3174	1.0759	70.5301	1.7720	72.3022	18.9028	1.6344	20.5372		78,816.06 49	78,816.06 49	1.9304		78,856.60 36
Total	115.0624	85.0119	428.4685	1.1191	70.5301	2.3196	72.8498	18.9028	2.1820	21.0848		87,456.26 36	87,456.26 36	2.0966	0.1584	87,549.39 59

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Energy	0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579
Mobile	89.1393	77.8110	422.3174	1.0759	70.5301	1.7720	72.3022	18.9028	1.6344	20.5372		78,816.0649	78,816.0649	1.9304		78,856.6036
Total	115.0624	85.0119	428.4685	1.1191	70.5301	2.3196	72.8498	18.9028	2.1820	21.0848		87,456.2636	87,456.2636	2.0966	0.1584	87,549.3959

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	89.1393	77.8110	422.3174	1.0759	70.5301	1.7720	72.3022	18.9028	1.6344	20.5372		78,816.0649	78,816.0649	1.9304		78,856.6036

Unmitigated	89.1393	77.8110	422.3174	1.0759	70.5301	1.7720	72.3022	18.9028	1.6344	20.5372		78,816.06	78,816.06	1.9304		78,856.60
												49	49			36

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	2,460.73	529.23	220.19	4,456,233	4,456,233
Hotel	1,295.00	1,297.50	942.50	2,365,414	2,365,414
Movie Theater (No Matinee)	947.92	947.92	947.92	1,784,931	1,784,931
Quality Restaurant	367.80	385.80	295.05	426,995	426,995
Regional Shopping Center	10,982.66	12,780.77	6455.06	18,572,295	18,572,295
Total	16,054.12	15,941.22	8,860.73	27,605,867	27,605,867

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00	66	17	17
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579
NaturalGas Unmitigated	0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Movie Theater (No Matinee)	2884.6	0.0311	0.2828	0.2376	1.7000e-003		0.0215	0.0215		0.0215	0.0215		339.3650	339.3650	6.5000e-003	6.2200e-003	341.4304
Quality Restaurant	6986.71	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	4252.93	0.0459	0.4170	0.3502	2.5000e-003		0.0317	0.0317		0.0317	0.0317		500.3449	500.3449	9.5900e-003	9.1700e-003	503.3899
General Office Building	21474	0.2316	2.1053	1.7685	0.0126		0.1600	0.1600		0.1600	0.1600		2,526.3584	2,526.3584	0.0484	0.0463	2,541.7334
Hotel	37841.5	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Total		0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Movie Theater (No Matinee)	2.8846	0.0311	0.2828	0.2376	1.7000e-003		0.0215	0.0215		0.0215	0.0215		339.3650	339.3650	6.5000e-003	6.2200e-003	341.4304

Quality Restaurant	6.98671	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	4.25293	0.0459	0.4170	0.3502	2.5000e-003		0.0317	0.0317		0.0317	0.0317		500.3449	500.3449	9.5900e-003	9.1700e-003	503.3899
General Office Building	21.474	0.2316	2.1053	1.7685	0.0126		0.1600	0.1600		0.1600	0.1600		2,526.3584	2,526.3584	0.0484	0.0463	2,541.7334
Hotel	37.8415	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Total		0.7920	7.2000	6.0480	0.0432		0.5472	0.5472		0.5472	0.5472		8,639.9765	8,639.9765	0.1656	0.1584	8,692.5579

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Mitigated	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004			0.2343
Unmitigated	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004			0.2343

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	0.9675					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000	
Consumer Products	24.1542					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000	
Landscaping	9.4300e-003	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004			0.2343

Total	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
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Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9675					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1542					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.4300e-003	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Total	25.1311	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Jack London Square - 2004 Project Operational Emissions Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	386.30	1000sqft	8.87	386,300.00	0
Hotel	250.00	Room	8.33	363,000.00	0
Movie Theater (No Matinee)	41.00	1000sqft	0.94	41,000.00	0
Quality Restaurant	15.00	1000sqft	0.34	15,000.00	0
Regional Shopping Center	323.40	1000sqft	7.42	323,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Trip generation rates for 2004 Project with incorporation of mode split and internal capture.

Area Coating - No reapplication of architectural coatings for building exteriors would be required.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00

tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	ReapplicationRatePercent	10	3
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	2.37	1.37
tblVehicleTrips	ST_TR	8.19	5.19
tblVehicleTrips	ST_TR	80.00	23.12
tblVehicleTrips	ST_TR	94.36	25.72
tblVehicleTrips	ST_TR	49.97	39.52
tblVehicleTrips	SU_TR	0.98	0.57
tblVehicleTrips	SU_TR	5.95	3.77
tblVehicleTrips	SU_TR	80.00	23.12
tblVehicleTrips	SU_TR	72.16	19.67
tblVehicleTrips	SU_TR	25.24	19.96
tblVehicleTrips	WD_TR	11.01	6.37
tblVehicleTrips	WD_TR	8.17	5.18
tblVehicleTrips	WD_TR	80.00	23.12
tblVehicleTrips	WD_TR	89.95	24.52
tblVehicleTrips	WD_TR	42.94	33.96

2.0 Emissions Summary

2.2 Overall Operational Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.5856	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Energy	0.1445	1.3140	1.1038	7.8800e-003		0.0999	0.0999		0.0999	0.0999	0.0000	5,274.1093	5,274.1093	0.2012	0.0622	5,297.6116

Mobile	11.8884	11.5152	55.5266	0.1646	10.3456	0.2687	10.6142	2.7816	0.2478	3.0294	0.0000	10,946.01 81	10,946.01 81	0.2656	0.0000	10,951.59 54
Waste						0.0000	0.0000		0.0000	0.0000	219.8595	0.0000	219.8595	12.9933	0.0000	492.7193
Water						0.0000	0.0000		0.0000	0.0000	38.0622	248.7328	286.7950	3.9206	0.0946	398.4646
Total	16.6185	12.8293	56.6397	0.1725	10.3456	0.3685	10.7141	2.7816	0.3477	3.1293	257.9217	16,468.87 84	16,726.80 01	17.3808	0.1568	17,140.41 01

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.5856	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Energy	0.1445	1.3140	1.1038	7.8800e-003		0.0999	0.0999		0.0999	0.0999	0.0000	5,274.109 3	5,274.109 3	0.2012	0.0622	5,297.611 6
Mobile	11.8884	11.5152	55.5266	0.1646	10.3456	0.2687	10.6142	2.7816	0.2478	3.0294	0.0000	10,946.01 81	10,946.01 81	0.2656	0.0000	10,951.59 54
Waste						0.0000	0.0000		0.0000	0.0000	219.8595	0.0000	219.8595	12.9933	0.0000	492.7193
Water						0.0000	0.0000		0.0000	0.0000	38.0622	248.7328	286.7950	3.9199	0.0945	398.4038
Total	16.6185	12.8293	56.6397	0.1725	10.3456	0.3685	10.7141	2.7816	0.3477	3.1293	257.9217	16,468.87 84	16,726.80 01	17.3801	0.1567	17,140.34 94

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.0850e-003	0.0957	3.5425e-004

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	11.8884	11.5152	55.5266	0.1646	10.3456	0.2687	10.6142	2.7816	0.2478	3.0294	0.0000	10,946.0181	10,946.0181	0.2656	0.0000	10,951.5954
Unmitigated	11.8884	11.5152	55.5266	0.1646	10.3456	0.2687	10.6142	2.7816	0.2478	3.0294	0.0000	10,946.0181	10,946.0181	0.2656	0.0000	10,951.5954

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	2,460.73	529.23	220.19	4,456,233	4,456,233
Hotel	1,295.00	1,297.50	942.50	2,365,414	2,365,414
Movie Theater (No Matinee)	947.92	947.92	947.92	1,784,931	1,784,931
Quality Restaurant	367.80	385.80	295.05	426,995	426,995
Regional Shopping Center	10,982.66	12,780.77	6455.06	18,572,295	18,572,295
Total	16,054.12	15,941.22	8,860.73	27,605,867	27,605,867

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00	66	17	17
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated:							0.0000	0.0000		0.0000	0.0000	3,843.6643	3,843.6643	0.1738	0.0360	3,858.4612
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	3,843.6643	3,843.6643	0.1738	0.0360	3,858.4612
Natural Gas Mitigated	0.1445	1.3140	1.1038	7.8800e-003		0.0999	0.0999		0.0999	0.0999	0.0000	1,430.4450	1,430.4450	0.0274	0.0262	1,439.1505
Natural Gas Unmitigated	0.1445	1.3140	1.1038	7.8800e-003		0.0999	0.0999		0.0999	0.0999	0.0000	1,430.4450	1,430.4450	0.0274	0.0262	1,439.1505

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Movie Theater (No Matinee)	1.05288e+006	5.6800e-003	0.0516	0.0434	3.1000e-004		3.9200e-003	3.9200e-003		3.9200e-003	3.9200e-003	0.0000	56.1857	56.1857	1.0800e-003	1.0300e-003	56.5276
Quality Restaurant	2.55015e+006	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003	0.0000	136.0857	136.0857	2.6100e-003	2.4900e-003	136.9139
Regional Shopping Center	1.55232e+006	8.3700e-003	0.0761	0.0639	4.6000e-004		5.7800e-003	5.7800e-003		5.7800e-003	5.7800e-003	0.0000	82.8377	82.8377	1.5900e-003	1.5200e-003	83.3418
General Office Building	7.83803e+006	0.0423	0.3842	0.3227	2.3100e-003		0.0292	0.0292		0.0292	0.0292	0.0000	418.2670	418.2670	8.0200e-003	7.6700e-003	420.8125
Hotel	1.38122e+007	0.0745	0.6771	0.5687	4.0600e-003		0.0515	0.0515		0.0515	0.0515	0.0000	737.0689	737.0689	0.0141	0.0135	741.5546
Total		0.1445	1.3140	1.1038	7.8900e-003		0.0999	0.0999		0.0999	0.0999	0.0000	1,430.4450	1,430.4450	0.0274	0.0262	1,439.1504

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Quality Restaurant	2.55015e+006	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003	0.0000	136.0857	136.0857	2.6100e-003	2.4900e-003	136.9139
Regional Shopping Center	1.55232e+006	8.3700e-003	0.0761	0.0639	4.6000e-004		5.7800e-003	5.7800e-003		5.7800e-003	5.7800e-003	0.0000	82.8377	82.8377	1.5900e-003	1.5200e-003	83.3418
General Office Building	7.83803e+006	0.0423	0.3842	0.3227	2.3100e-003		0.0292	0.0292		0.0292	0.0292	0.0000	418.2670	418.2670	8.0200e-003	7.6700e-003	420.8125
Hotel	1.38122e+007	0.0745	0.6771	0.5687	4.0600e-003		0.0515	0.0515		0.0515	0.0515	0.0000	737.0689	737.0689	0.0141	0.0135	741.5546
Movie Theater (No Matinee)	1.05288e+006	5.6800e-003	0.0516	0.0434	3.1000e-004		3.9200e-003	3.9200e-003		3.9200e-003	3.9200e-003	0.0000	56.1857	56.1857	1.0800e-003	1.0300e-003	56.5276
Total		0.1445	1.3140	1.1038	7.8900e-003		0.0999	0.0999		0.0999	0.0999	0.0000	1,430.4450	1,430.4450	0.0274	0.0262	1,439.1504

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	5.36184e+006	1,559.8219	0.0705	0.0146	1,565.8267
Hotel	3.3033e+006	960.9679	0.0435	8.9900e-003	964.6673
Movie Theater (No Matinee)	339070	98.6394	4.4600e-003	9.2000e-004	99.0191
Quality Restaurant	453600	131.9574	5.9700e-003	1.2300e-003	132.4654
Regional Shopping Center	3.75467e+006	1,092.2777	0.0494	0.0102	1,096.4827
Total		3,843.6643	0.1738	0.0360	3,858.4612

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	5.36184e+006	1,559.8219	0.0705	0.0146	1,565.8267
Hotel	3.3033e+006	960.9679	0.0435	8.9900e-003	964.6673
Movie Theater (No Matinee)	339070	98.6394	4.4600e-003	9.2000e-004	99.0191
Quality Restaurant	453600	131.9574	5.9700e-003	1.2300e-003	132.4654
Regional Shopping Center	3.75467e+006	1,092.2777	0.0494	0.0102	1,096.4827
Total		3,843.6643	0.1738	0.0360	3,858.4612

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.5856	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Unmitigated	4.5856	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1766					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.4081					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.5000e-004	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Total	4.5856	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1766					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.4081					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.5000e-004	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Total	4.5856	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

Mitigated	286.7950	3.9199	0.0945	398.4038
Unmitigated	286.7950	3.9206	0.0946	398.4646

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	68.6585 / 42.081	172.7056	2.2441	0.0542	236.6448
Hotel	6.34169 / 0.704632	12.7120	0.2071	4.9800e-003	18.6053
Movie Theater (No Matinee)	16.4657 / 1.051	32.2129	0.5378	0.0129	47.5113
Quality Restaurant	4.55301 / 0.290617	8.9074	0.1487	3.5700e-003	13.1376
Regional Shopping Center	23.9551 / 14.6821	60.2572	0.7830	0.0189	82.5657
Total		286.7950	3.9206	0.0946	398.4646

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	68.6585 / 42.081	172.7056	2.2437	0.0542	236.6100
Hotel	6.34169 / 0.704632	12.7120	0.2071	4.9700e-003	18.6021
Movie Theater (No Matinee)	16.4657 / 1.051	32.2129	0.5377	0.0129	47.5030

Quality Restaurant	4.55301 / 0.290617	8.9074	0.1487	3.5700e- 003	13.1353
Regional Shopping Center	23.9551 / 14.6821	60.2572	0.7828	0.0189	82.5535
Total		286.7950	3.9199	0.0945	398.4038

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	219.8595	12.9933	0.0000	492.7193
Unmitigated	219.8595	12.9933	0.0000	492.7193

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	359.26	72.9265	4.3098	0.0000	163.4331
Hotel	136.88	27.7854	1.6421	0.0000	62.2689
Movie Theater (No Matinee)	233.7	47.4390	2.8036	0.0000	106.3138
Quality Restaurant	13.69	2.7790	0.1642	0.0000	6.2278

Regional Shopping Center	339.57	68.9296	4.0736	0.0000	154.4758
Total		219.8595	12.9933	0.0000	492.7193

Mitigated

Land Use	Waste Disposed tons	Total CO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
General Office Building	359.26	72.9265	4.3098	0.0000	163.4331
Hotel	136.88	27.7854	1.6421	0.0000	62.2689
Movie Theater (No Matinee)	233.7	47.4390	2.8036	0.0000	106.3138
Quality Restaurant	13.69	2.7790	0.1642	0.0000	6.2278
Regional Shopping Center	339.57	68.9296	4.0736	0.0000	154.4758
Total		219.8595	12.9933	0.0000	492.7193

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Jack London Square - 2013 Project Emissions (Max Residential Scenario) Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	217.30	1000sqft	4.99	217,300.00	0
Hotel	250.00	Room	8.33	363,000.00	0
Quality Restaurant	15.00	1000sqft	0.34	15,000.00	0
Apartments High Rise	666.00	Dwelling Unit	2.18	666,000.00	1905
Regional Shopping Center	194.40	1000sqft	4.46	194,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage of both Site D and F2 is approximately 2 acres based on footprints.

Vehicle Trips - Trip generation rates with incorporation of the 2000 BATS modal split adjustment factors.

Woodstoves - Assumes no fireplaces for the proposed residential dwelling units.

Area Coating - No reapplicaton of architectural coatings for building exteriors would be required.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00

tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_Residential_Exterior	449550	0
tblAreaCoating	ReapplicationRatePercent	10	3
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior	0	150
tblFireplaces	FireplaceDayYear	4.29	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	92.40	0.00
tblFireplaces	NumberGas	366.30	0.00
tblFireplaces	NumberNoFireplace	206.46	0.00
tblFireplaces	NumberWood	93.24	0.00
tblLandUse	LotAcreage	10.74	2.18
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	5.27
tblVehicleTrips	ST_TR	2.37	1.84
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	ST_TR	94.36	74.16
tblVehicleTrips	ST_TR	49.97	49.23
tblVehicleTrips	SU_TR	6.07	4.47
tblVehicleTrips	SU_TR	0.98	0.76
tblVehicleTrips	SU_TR	5.95	4.27
tblVehicleTrips	SU_TR	72.16	56.71
tblVehicleTrips	SU_TR	25.24	24.86
tblVehicleTrips	WD_TR	6.59	4.85
tblVehicleTrips	WD_TR	11.01	8.57
tblVehicleTrips	WD_TR	8.17	5.86
tblVehicleTrips	WD_TR	89.95	70.69
tblVehicleTrips	WD_TR	42.94	42.30

tblWoodstoves	NumberCatalytic	3.33	0.00
tblWoodstoves	NumberNoncatalytic	3.33	0.00
tblWoodstoves	WoodstoveDayYear	10.82	0.00
tblWoodstoves	WoodstoveWoodMass	954.80	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698
Energy	0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097
Mobile	75.7087	71.6817	313.6130	1.1431	70.9064	1.7653	72.6717	19.0036	1.6283	20.6319		83,324.8995	83,324.8995	1.9238		83,365.2982
Total	110.2846	79.6326	373.9650	1.1905	70.9064	2.6337	73.5401	19.0036	2.4967	21.5002	0.0000	92,320.3512	92,320.3512	2.1888	0.1631	92,416.8776

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698
Energy	0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097
Mobile	75.7087	71.6817	313.6130	1.1431	70.9064	1.7653	72.6717	19.0036	1.6283	20.6319		83,324.8995	83,324.8995	1.9238		83,365.2982
Total	110.2846	79.6326	373.9650	1.1905	70.9064	2.6337	73.5401	19.0036	2.4967	21.5002	0.0000	92,320.3512	92,320.3512	2.1888	0.1631	92,416.8776

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	75.7087	71.6817	313.6130	1.1431	70.9064	1.7653	72.6717	19.0036	1.6283	20.6319	83,324.8995	83,324.8995	1.9238			83,365.2982
Unmitigated	75.7087	71.6817	313.6130	1.1431	70.9064	1.7653	72.6717	19.0036	1.6283	20.6319	83,324.8995	83,324.8995	1.9238			83,365.2982

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	3,230.10	3,509.82	2977.02	7,219,261	7,219,261
General Office Building	1,862.26	399.83	165.15	3,371,697	3,371,697
Hotel	1,465.00	1,467.50	1067.50	2,676,188	2,676,188
Quality Restaurant	1,060.35	1,112.40	850.65	1,231,038	1,231,038
Regional Shopping Center	8,223.12	9,570.31	4832.78	13,905,885	13,905,885
Total	15,840.83	16,059.86	9,893.10	28,404,070	28,404,070

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097
NaturalGas Unmitigated	0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	16154.9	0.1742	1.4888	0.6335	9.5000e-003		0.1204	0.1204		0.1204	0.1204		1,900.5783	1,900.5783	0.0364	0.0348	1,912.1449
General Office Building	12079.5	0.1303	1.1843	0.9948	7.1100e-003		0.0900	0.0900		0.0900	0.0900		1,421.1175	1,421.1175	0.0272	0.0261	1,429.7662

Hotel	37841.5	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Quality Restaurant	6986.71	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	2556.49	0.0276	0.2506	0.2105	1.5000e-003		0.0191	0.0191		0.0191	0.0191		300.7639	300.7639	5.7600e-003	5.5100e-003	302.5943
Total		0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	12.0795	0.1303	1.1843	0.9948	7.1100e-003		0.0900	0.0900		0.0900	0.0900		1,421.1175	1,421.1175	0.0272	0.0261	1,429.7662
Hotel	37.8415	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Quality Restaurant	6.98671	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	2.55649	0.0276	0.2506	0.2105	1.5000e-003		0.0191	0.0191		0.0191	0.0191		300.7639	300.7639	5.7600e-003	5.5100e-003	302.5943
Apartments High Rise	16.1549	0.1742	1.4888	0.6335	9.5000e-003		0.1204	0.1204		0.1204	0.1204		1,900.5783	1,900.5783	0.0364	0.0348	1,912.1449
Total		0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698

Unmitigated	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698
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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	31.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6434	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050		99.0839	99.0839	0.0946		101.0698
Total	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	31.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6434	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050		99.0839	99.0839	0.0946		101.0698
Total	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Jack London Square - 2013 Project Emissions (Max Residential Scenario) Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	217.30	1000sqft	4.99	217,300.00	0
Hotel	250.00	Room	8.33	363,000.00	0
Quality Restaurant	15.00	1000sqft	0.34	15,000.00	0
Apartments High Rise	666.00	Dwelling Unit	2.18	666,000.00	1905
Regional Shopping Center	194.40	1000sqft	4.46	194,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5	Operational Year		2035	
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage of both Site D and F2 is approximately 2 acres based on footprints.

Vehicle Trips - Trip generation rates with incorporation of the 2000 BATS modal split adjustment factors.

Woodstoves - Assumes no fireplaces for the proposed residential dwelling units.

Area Coating - No reapplicaton of architectural coatings for building exteriors would be required.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00

tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_Residential_Exterior	449550	0
tblAreaCoating	ReapplicationRatePercent	10	3
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior	0	150
tblFireplaces	FireplaceDayYear	4.29	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	92.40	0.00
tblFireplaces	NumberGas	366.30	0.00
tblFireplaces	NumberNoFireplace	206.46	0.00
tblFireplaces	NumberWood	93.24	0.00
tblLandUse	LotAcreage	10.74	2.18
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	5.27
tblVehicleTrips	ST_TR	2.37	1.84
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	ST_TR	94.36	74.16
tblVehicleTrips	ST_TR	49.97	49.23
tblVehicleTrips	SU_TR	6.07	4.47
tblVehicleTrips	SU_TR	0.98	0.76
tblVehicleTrips	SU_TR	5.95	4.27
tblVehicleTrips	SU_TR	72.16	56.71
tblVehicleTrips	SU_TR	25.24	24.86
tblVehicleTrips	WD_TR	6.59	4.85
tblVehicleTrips	WD_TR	11.01	8.57
tblVehicleTrips	WD_TR	8.17	5.86
tblVehicleTrips	WD_TR	89.95	70.69
tblVehicleTrips	WD_TR	42.94	42.30

tblWoodstoves	NumberCatalytic	3.33	0.00
tblWoodstoves	NumberNoncatalytic	3.33	0.00
tblWoodstoves	WoodstoveDayYear	10.82	0.00
tblWoodstoves	WoodstoveWoodMass	954.80	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698
Energy	0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097
Mobile	89.2702	77.5987	417.8638	1.0802	70.9064	1.7761	72.6825	19.0036	1.6382	20.6418		79,141.1288	79,141.1288	1.9345		79,181.7535
Total	123.8460	85.5496	478.2158	1.1276	70.9064	2.6445	73.5509	19.0036	2.5066	21.5102	0.0000	88,136.5806	88,136.5806	2.1996	0.1631	88,233.3329

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698
Energy	0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097
Mobile	89.2702	77.5987	417.8638	1.0802	70.9064	1.7761	72.6825	19.0036	1.6382	20.6418		79,141.1288	79,141.1288	1.9345		79,181.7535
Total	123.8460	85.5496	478.2158	1.1276	70.9064	2.6445	73.5509	19.0036	2.5066	21.5102	0.0000	88,136.5806	88,136.5806	2.1996	0.1631	88,233.3329

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	89.2702	77.5987	417.8638	1.0802	70.9064	1.7761	72.6825	19.0036	1.6382	20.6418		79,141.1288	79,141.1288	1.9345		79,181.7535
Unmitigated	89.2702	77.5987	417.8638	1.0802	70.9064	1.7761	72.6825	19.0036	1.6382	20.6418		79,141.1288	79,141.1288	1.9345		79,181.7535

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	3,230.10	3,509.82	2977.02	7,219,261	7,219,261
General Office Building	1,862.26	399.83	165.15	3,371,697	3,371,697
Hotel	1,465.00	1,467.50	1067.50	2,676,188	2,676,188
Quality Restaurant	1,060.35	1,112.40	850.65	1,231,038	1,231,038
Regional Shopping Center	8,223.12	9,570.31	4832.78	13,905,885	13,905,885
Total	15,840.83	16,059.86	9,893.10	28,404,070	28,404,070

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097
NaturalGas Unmitigated	0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	16154.9	0.1742	1.4888	0.6335	9.5000e-003		0.1204	0.1204		0.1204	0.1204		1,900.5783	1,900.5783	0.0364	0.0348	1,912.1449
General Office Building	12079.5	0.1303	1.1843	0.9948	7.1100e-003		0.0900	0.0900		0.0900	0.0900		1,421.1175	1,421.1175	0.0272	0.0261	1,429.7662

Hotel	37841.5	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Quality Restaurant	6986.71	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	2556.49	0.0276	0.2506	0.2105	1.5000e-003		0.0191	0.0191		0.0191	0.0191		300.7639	300.7639	5.7600e-003	5.5100e-003	302.5943
Total		0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	12.0795	0.1303	1.1843	0.9948	7.1100e-003		0.0900	0.0900		0.0900	0.0900		1,421.1175	1,421.1175	0.0272	0.0261	1,429.7662
Hotel	37.8415	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Quality Restaurant	6.98671	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	2.55649	0.0276	0.2506	0.2105	1.5000e-003		0.0191	0.0191		0.0191	0.0191		300.7639	300.7639	5.7600e-003	5.5100e-003	302.5943
Apartments High Rise	16.1549	0.1742	1.4888	0.6335	9.5000e-003		0.1204	0.1204		0.1204	0.1204		1,900.5783	1,900.5783	0.0364	0.0348	1,912.1449
Total		0.8155	7.3186	5.5306	0.0445		0.5634	0.5634		0.5634	0.5634		8,896.3678	8,896.3678	0.1705	0.1631	8,950.5097

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698

Unmitigated	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698
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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	31.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6434	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050		99.0839	99.0839	0.0946		101.0698
Total	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	31.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6434	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050		99.0839	99.0839	0.0946		101.0698
Total	33.7604	0.6323	54.8214	2.9100e-003		0.3050	0.3050		0.3050	0.3050	0.0000	99.0839	99.0839	0.0946	0.0000	101.0698

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Jack London Square - 2013 Project Emissions (Max Residential Scenario) Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	217.30	1000sqft	4.99	217,300.00	0
Hotel	250.00	Room	8.33	363,000.00	0
Quality Restaurant	15.00	1000sqft	0.34	15,000.00	0
Apartments High Rise	666.00	Dwelling Unit	2.18	666,000.00	1905
Regional Shopping Center	194.40	1000sqft	4.46	194,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage of both Site D and F2 is approximately 2 acres based on footprints.

Vehicle Trips - Trip generation rates with incorporation of the 2000 BATS modal split adjustment factors.

Woodstoves - Assumes no fireplaces for the proposed residential dwelling units.

Area Coating - No reapplicaton of architectural coatings for building exteriors would be required.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00

tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_Residential_Exterior	449550	0
tblAreaCoating	ReapplicationRatePercent	10	3
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior	0	150
tblFireplaces	FireplaceDayYear	4.29	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	92.40	0.00
tblFireplaces	NumberGas	366.30	0.00
tblFireplaces	NumberNoFireplace	206.46	0.00
tblFireplaces	NumberWood	93.24	0.00
tblLandUse	LotAcreage	10.74	2.18
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	5.27
tblVehicleTrips	ST_TR	2.37	1.84
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	ST_TR	94.36	74.16
tblVehicleTrips	ST_TR	49.97	49.23
tblVehicleTrips	SU_TR	6.07	4.47
tblVehicleTrips	SU_TR	0.98	0.76
tblVehicleTrips	SU_TR	5.95	4.27
tblVehicleTrips	SU_TR	72.16	56.71
tblVehicleTrips	SU_TR	25.24	24.86
tblVehicleTrips	WD_TR	6.59	4.85
tblVehicleTrips	WD_TR	11.01	8.57
tblVehicleTrips	WD_TR	8.17	5.86
tblVehicleTrips	WD_TR	89.95	70.69
tblVehicleTrips	WD_TR	42.94	42.30

tblWoodstoves	NumberCatalytic	3.33	0.00
tblWoodstoves	NumberNoncatalytic	3.33	0.00
tblWoodstoves	WoodstoveDayYear	10.82	0.00
tblWoodstoves	WoodstoveWoodMass	954.80	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.0093	0.0569	4.9339	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.0899	8.0899	7.7200e-003	0.0000	8.2520
Energy	0.1488	1.3357	1.0093	8.1200e-003		0.1028	0.1028		0.1028	0.1028	0.0000	4,800.2897	4,800.2897	0.1787	0.0581	4,822.0629
Mobile	12.1733	11.7416	56.2218	0.1691	10.6447	0.2755	10.9202	2.8620	0.2541	3.1161	0.0000	11,247.0379	11,247.0379	0.2723	0.0000	11,252.7567
Waste						0.0000	0.0000		0.0000	0.0000	175.2096	0.0000	175.2096	10.3546	0.0000	392.6561
Water						0.0000	0.0000		0.0000	0.0000	34.0440	230.8719	264.9159	3.5071	0.0847	364.8290
Total	18.3314	13.1342	62.1651	0.1775	10.6447	0.4058	11.0505	2.8620	0.3844	3.2464	209.2537	16,286.2894	16,495.5430	14.3204	0.1429	16,840.5567

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.0093	0.0569	4.9339	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.0899	8.0899	7.7200e-003	0.0000	8.2520
Energy	0.1488	1.3357	1.0093	8.1200e-003		0.1028	0.1028		0.1028	0.1028	0.0000	4,800.2897	4,800.2897	0.1787	0.0581	4,822.0629

Mobile	12.1733	11.7416	56.2218	0.1691	10.6447	0.2755	10.9202	2.8620	0.2541	3.1161	0.0000	11,247.0379	11,247.0379	0.2723	0.0000	11,252.7567
Waste						0.0000	0.0000		0.0000	0.0000	175.2096	0.0000	175.2096	10.3546	0.0000	392.6561
Water						0.0000	0.0000		0.0000	0.0000	34.0440	230.8719	264.9159	3.5065	0.0846	364.7747
Total	18.3314	13.1342	62.1651	0.1775	10.6447	0.4058	11.0505	2.8620	0.3844	3.2464	209.2537	16,286.2894	16,495.5430	14.3198	0.1427	16,840.5024

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.4691e-003	0.0910	3.2250e-004

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	12.1733	11.7416	56.2218	0.1691	10.6447	0.2755	10.9202	2.8620	0.2541	3.1161	0.0000	11,247.0379	11,247.0379	0.2723	0.0000	11,252.7567
Unmitigated	12.1733	11.7416	56.2218	0.1691	10.6447	0.2755	10.9202	2.8620	0.2541	3.1161	0.0000	11,247.0379	11,247.0379	0.2723	0.0000	11,252.7567

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	3,230.10	3,509.82	2977.02	7,219,261	7,219,261
General Office Building	1,862.26	399.83	165.15	3,371,697	3,371,697
Hotel	1,465.00	1,467.50	1067.50	2,676,188	2,676,188
Quality Restaurant	1,060.35	1,112.40	850.65	1,231,038	1,231,038
Regional Shopping Center	8,223.12	9,570.31	4832.78	13,905,885	13,905,885
Total	15,840.83	16,059.86	9,893.10	28,404,070	28,404,070

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,327.3962	3,327.3962	0.1505	0.0311	3,340.2057
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,327.3962	3,327.3962	0.1505	0.0311	3,340.2057
NaturalGas Mitigated	0.1488	1.3357	1.0093	8.1200e-003		0.1028	0.1028		0.1028	0.1028	0.0000	1,472.8935	1,472.8935	0.0282	0.0270	1,481.8573
NaturalGas Unmitigated	0.1488	1.3357	1.0093	8.1200e-003		0.1028	0.1028		0.1028	0.1028	0.0000	1,472.8935	1,472.8935	0.0282	0.0270	1,481.8573

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	5.89654e+006	0.0318	0.2717	0.1156	1.7300e-003		0.0220	0.0220		0.0220	0.0220	0.0000	314.6621	314.6621	6.0300e-003	5.7700e-003	316.5770
General Office Building	4.40902e+006	0.0238	0.2161	0.1816	1.3000e-003		0.0164	0.0164		0.0164	0.0164	0.0000	235.2819	235.2819	4.5100e-003	4.3100e-003	236.7138
Hotel	1.38122e+007	0.0745	0.6771	0.5687	4.0600e-003		0.0515	0.0515		0.0515	0.0515	0.0000	737.0689	737.0689	0.0141	0.0135	741.5546
Quality Restaurant	2.55015e+006	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003	0.0000	136.0857	136.0857	2.6100e-003	2.4900e-003	136.9139
Regional Shopping Center	933120	5.0300e-003	0.0457	0.0384	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	49.7948	49.7948	9.5000e-004	9.1000e-004	50.0979
Total		0.1488	1.3357	1.0093	8.1100e-003		0.1028	0.1028		0.1028	0.1028	0.0000	1,472.8935	1,472.8935	0.0282	0.0270	1,481.8573

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	4.40902e+006	0.0238	0.2161	0.1816	1.3000e-003		0.0164	0.0164		0.0164	0.0164	0.0000	235.2819	235.2819	4.5100e-003	4.3100e-003	236.7138
Hotel	1.38122e+007	0.0745	0.6771	0.5687	4.0600e-003		0.0515	0.0515		0.0515	0.0515	0.0000	737.0689	737.0689	0.0141	0.0135	741.5546
Quality Restaurant	2.55015e+006	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003	0.0000	136.0857	136.0857	2.6100e-003	2.4900e-003	136.9139
Regional Shopping Center	933120	5.0300e-003	0.0457	0.0384	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003	0.0000	49.7948	49.7948	9.5000e-004	9.1000e-004	50.0979
Apartments High Rise	5.89654e+006	0.0318	0.2717	0.1156	1.7300e-003		0.0220	0.0220		0.0220	0.0220	0.0000	314.6621	314.6621	6.0300e-003	5.7700e-003	316.5770
Total		0.1488	1.3357	1.0093	8.1100e-003		0.1028	0.1028		0.1028	0.1028	0.0000	1,472.8935	1,472.8935	0.0282	0.0270	1,481.8573

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	2.40782e+006	700.4634	0.0317	6.5500e-003	703.1599
General Office Building	3.01612e+006	877.4251	0.0397	8.2100e-003	880.8029
Hotel	3.3033e+006	960.9679	0.0435	8.9900e-003	964.6673
Quality Restaurant	453600	131.9574	5.9700e-003	1.2300e-003	132.4654
Regional Shopping Center	2.25698e+006	656.5825	0.0297	6.1400e-003	659.1102
Total		3,327.3962	0.1505	0.0311	3,340.2057

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	2.40782e+006	700.4634	0.0317	6.5500e-003	703.1599
General Office Building	3.01612e+006	877.4251	0.0397	8.2100e-003	880.8029
Hotel	3.3033e+006	960.9679	0.0435	8.9900e-003	964.6673
Quality Restaurant	453600	131.9574	5.9700e-003	1.2300e-003	132.4654
Regional Shopping Center	2.25698e+006	656.5825	0.0297	6.1400e-003	659.1102
Total		3,327.3962	0.1505	0.0311	3,340.2057

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.0093	0.0569	4.9339	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.0899	8.0899	7.7200e-003	0.0000	8.2520
Unmitigated	6.0093	0.0569	4.9339	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.0899	8.0899	7.7200e-003	0.0000	8.2520

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1761					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.6852					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1479	0.0569	4.9339	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.0899	8.0899	7.7200e-003	0.0000	8.2520
Total	6.0093	0.0569	4.9339	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.0899	8.0899	7.7200e-003	0.0000	8.2520

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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SubCategory	tons/yr										MT/yr					
	Architectural Coating	0.1761					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.6852					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Landscaping	0.1479	0.0569	4.9339	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.0899	8.0899	7.7200e-003	0.0000	8.2520
Total	6.0093	0.0569	4.9339	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.0899	8.0899	7.7200e-003	0.0000	8.2520

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	264.9159	3.5065	0.0846	364.7747
Unmitigated	264.9159	3.5071	0.0847	364.8290

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	43.3926 / 27.3562	109.9255	1.4183	0.0343	150.3384
General Office Building	38.6215 / 23.6713	97.1497	1.2623	0.0305	133.1165

Hotel	6.34169 / 0.704632	12.7120	0.2071	4.9800e- 003	18.6053
Quality Restaurant	4.55301 / 0.290617	8.9074	0.1487	3.5700e- 003	13.1376
Regional Shopping Center	14.3997 / 8.82562	36.2214	0.4707	0.0114	49.6313
Total		264.9159	3.5071	0.0847	364.8290

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	43.3926 / 27.3562	109.9255	1.4180	0.0342	150.3164
General Office Building	38.6215 / 23.6713	97.1497	1.2621	0.0305	133.0970
Hotel	6.34169 / 0.704632	12.7120	0.2071	4.9700e- 003	18.6021
Quality Restaurant	4.55301 / 0.290617	8.9074	0.1487	3.5700e- 003	13.1353
Regional Shopping Center	14.3997 / 8.82562	36.2214	0.4706	0.0114	49.6240
Total		264.9159	3.5065	0.0846	364.7747

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			

Mitigated	175.2096	10.3546	0.0000	392.6561
Unmitigated	175.2096	10.3546	0.0000	392.6561

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	306.36	62.1883	3.6752	0.0000	139.3680
General Office Building	202.09	41.0224	2.4244	0.0000	91.9339
Hotel	136.88	27.7854	1.6421	0.0000	62.2689
Quality Restaurant	13.69	2.7790	0.1642	0.0000	6.2278
Regional Shopping Center	204.12	41.4345	2.4487	0.0000	92.8574
Total		175.2096	10.3546	0.0000	392.6561

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	306.36	62.1883	3.6752	0.0000	139.3680
General Office Building	202.09	41.0224	2.4244	0.0000	91.9339
Hotel	136.88	27.7854	1.6421	0.0000	62.2689

Quality Restaurant	13.69	2.7790	0.1642	0.0000	6.2278
Regional Shopping Center	204.12	41.4345	2.4487	0.0000	92.8574
Total		175.2096	10.3546	0.0000	392.6561

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Jack London Square - 2013 Project Emissions (Max. Commercial Scenario)

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	441.30	1000sqft	10.13	441,300.00	0
Hotel	250.00	Room	8.33	363,000.00	0
Movie Theater (No Matinee)	41.00	1000sqft	0.94	41,000.00	0
Quality Restaurant	15.00	1000sqft	0.34	15,000.00	0
Regional Shopping Center	268.40	1000sqft	6.16	268,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Trip generation rates with incorporation of the 2000 BATS modal split adjustment factors.

Area Coating - No reapplication of architectural coatings for building exteriors would be required.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00

tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	ReapplicationRatePercent	10	3
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior	0	150
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	2.37	1.57
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	ST_TR	80.00	26.07
tblVehicleTrips	ST_TR	94.36	74.16
tblVehicleTrips	ST_TR	49.97	43.96
tblVehicleTrips	SU_TR	0.98	0.64
tblVehicleTrips	SU_TR	5.95	4.27
tblVehicleTrips	SU_TR	80.00	26.07
tblVehicleTrips	SU_TR	72.16	56.71
tblVehicleTrips	SU_TR	25.24	22.21
tblVehicleTrips	WD_TR	11.01	7.23
tblVehicleTrips	WD_TR	8.17	5.86
tblVehicleTrips	WD_TR	80.00	26.07
tblVehicleTrips	WD_TR	89.95	70.69
tblVehicleTrips	WD_TR	42.94	37.78

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Energy	0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302
Mobile	78.9684	75.0099	329.1851	1.1879	73.5979	1.8375	75.4354	19.7249	1.6949	21.4198		86,590.8459	86,590.8459	2.0028		86,632.9040
Total	104.5942	82.4396	335.5285	1.2325	73.5979	2.4025	76.0004	19.7249	2.2598	21.9848		95,505.6458	95,505.6458	2.1742	0.1634	95,601.9686

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Energy	0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302
Mobile	78.9684	75.0099	329.1851	1.1879	73.5979	1.8375	75.4354	19.7249	1.6949	21.4198		86,590.8459	86,590.8459	2.0028		86,632.9040
Total	104.5942	82.4396	335.5285	1.2325	73.5979	2.4025	76.0004	19.7249	2.2598	21.9848		95,505.6458	95,505.6458	2.1742	0.1634	95,601.9686

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day				
	78.9684	75.0099	329.1851	1.1879	73.5979	1.8375	75.4354	19.7249	1.6949	21.4198	86,590.84	86,590.84	2.0028	86,632.90	
Mitigated	78.9684	75.0099	329.1851	1.1879	73.5979	1.8375	75.4354	19.7249	1.6949	21.4198	59	59	2.0028	40	
Unmitigated	78.9684	75.0099	329.1851	1.1879	73.5979	1.8375	75.4354	19.7249	1.6949	21.4198	59	59	2.0028	40	

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	3,190.60	692.84	282.43	5,779,197	5,779,197
Hotel	1,465.00	1,467.50	1067.50	2,676,188	2,676,188
Movie Theater (No Matinee)	1,068.87	1,068.87	1068.87	2,012,679	2,012,679
Quality Restaurant	1,060.35	1,112.40	850.65	1,231,038	1,231,038
Regional Shopping Center	10,140.15	11,798.86	5961.16	17,147,519	17,147,519
Total	16,924.97	16,140.48	9,230.62	28,846,620	28,846,620

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00	66	17	17
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302
NaturalGas Unmitigated	0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Movie Theater (No Matinee)	2884.6	0.0311	0.2828	0.2376	1.7000e-003		0.0215	0.0215		0.0215	0.0215		339.3650	339.3650	6.5000e-003	6.2200e-003	341.4304
Quality Restaurant	6986.71	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	3529.64	0.0381	0.3460	0.2907	2.0800e-003		0.0263	0.0263		0.0263	0.0263		415.2522	415.2522	7.9600e-003	7.6100e-003	417.7794
General Office Building	24531.4	0.2646	2.4050	2.0202	0.0144		0.1828	0.1828		0.1828	0.1828		2,886.0522	2,886.0522	0.0553	0.0529	2,903.6163
Hotel	37841.5	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Total		0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

Movie Theater (No Matinee)	2.8846	0.0311	0.2828	0.2376	1.7000e-003		0.0215	0.0215		0.0215	0.0215		339.3650	339.3650	6.5000e-003	6.2200e-003	341.4304
Quality Restaurant	6.98671	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	3.52964	0.0381	0.3460	0.2907	2.0800e-003		0.0263	0.0263		0.0263	0.0263		415.2522	415.2522	7.9600e-003	7.6100e-003	417.7794
General Office Building	24.5314	0.2646	2.4050	2.0202	0.0144		0.1828	0.1828		0.1828	0.1828		2,886.0522	2,886.0522	0.0553	0.0529	2,903.6163
Hotel	37.8415	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Total		0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Unmitigated	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1542					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	9.4300e-003	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Total	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1542					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.4300e-003	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Total	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Jack London Square - 2013 Project Emissions (Max. Commercial Scenario)
Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	441.30	1000sqft	10.13	441,300.00	0
Hotel	250.00	Room	8.33	363,000.00	0
Movie Theater (No Matinee)	41.00	1000sqft	0.94	41,000.00	0
Quality Restaurant	15.00	1000sqft	0.34	15,000.00	0
Regional Shopping Center	268.40	1000sqft	6.16	268,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Trip generation rates with incorporation of the 2000 BATS modal split adjustment factors.

Area Coating - No reapplicaton of architectural coatings for building exteriors would be required.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00

tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	ReapplicationRatePercent	10	3
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior	0	150
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	2.37	1.57
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	ST_TR	80.00	26.07
tblVehicleTrips	ST_TR	94.36	74.16
tblVehicleTrips	ST_TR	49.97	43.96
tblVehicleTrips	SU_TR	0.98	0.64
tblVehicleTrips	SU_TR	5.95	4.27
tblVehicleTrips	SU_TR	80.00	26.07
tblVehicleTrips	SU_TR	72.16	56.71
tblVehicleTrips	SU_TR	25.24	22.21
tblVehicleTrips	WD_TR	11.01	7.23
tblVehicleTrips	WD_TR	8.17	5.86
tblVehicleTrips	WD_TR	80.00	26.07
tblVehicleTrips	WD_TR	89.95	70.69
tblVehicleTrips	WD_TR	42.94	37.78

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Energy	0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302
Mobile	93.0073	81.1788	440.5078	1.1226	73.5979	1.8490	75.4469	19.7249	1.7054	21.4303		82,241.7119	82,241.7119	2.0142		82,284.0104
Total	118.6331	88.6085	446.8511	1.1672	73.5979	2.4139	76.0119	19.7249	2.2704	21.9953		91,156.5118	91,156.5118	2.1857	0.1634	91,253.0750

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Energy	0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302
Mobile	93.0073	81.1788	440.5078	1.1226	73.5979	1.8490	75.4469	19.7249	1.7054	21.4303		82,241.7119	82,241.7119	2.0142		82,284.0104
Total	118.6331	88.6085	446.8511	1.1672	73.5979	2.4139	76.0119	19.7249	2.2704	21.9953		91,156.5118	91,156.5118	2.1857	0.1634	91,253.0750

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day				
	93.0073	81.1788	440.5078	1.1226	73.5979	1.8490	75.4469	19.7249	1.7054	21.4303	82,241.71	82,241.71	2.0142	82,284.01	
Mitigated	93.0073	81.1788	440.5078	1.1226	73.5979	1.8490	75.4469	19.7249	1.7054	21.4303	19	19	2.0142	04	
Unmitigated	93.0073	81.1788	440.5078	1.1226	73.5979	1.8490	75.4469	19.7249	1.7054	21.4303	19	19	2.0142	04	

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	3,190.60	692.84	282.43	5,779,197	5,779,197
Hotel	1,465.00	1,467.50	1067.50	2,676,188	2,676,188
Movie Theater (No Matinee)	1,068.87	1,068.87	1068.87	2,012,679	2,012,679
Quality Restaurant	1,060.35	1,112.40	850.65	1,231,038	1,231,038
Regional Shopping Center	10,140.15	11,798.86	5961.16	17,147,519	17,147,519
Total	16,924.97	16,140.48	9,230.62	28,846,620	28,846,620

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00	66	17	17
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302
NaturalGas Unmitigated	0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Movie Theater (No Matinee)	2884.6	0.0311	0.2828	0.2376	1.7000e-003		0.0215	0.0215		0.0215	0.0215		339.3650	339.3650	6.5000e-003	6.2200e-003	341.4304
Quality Restaurant	6986.71	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	3529.64	0.0381	0.3460	0.2907	2.0800e-003		0.0263	0.0263		0.0263	0.0263		415.2522	415.2522	7.9600e-003	7.6100e-003	417.7794
General Office Building	24531.4	0.2646	2.4050	2.0202	0.0144		0.1828	0.1828		0.1828	0.1828		2,886.0522	2,886.0522	0.0553	0.0529	2,903.6163
Hotel	37841.5	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Total		0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

Movie Theater (No Matinee)	2.8846	0.0311	0.2828	0.2376	1.7000e-003		0.0215	0.0215		0.0215	0.0215		339.3650	339.3650	6.5000e-003	6.2200e-003	341.4304
Quality Restaurant	6.98671	0.0754	0.6850	0.5754	4.1100e-003		0.0521	0.0521		0.0521	0.0521		821.9662	821.9662	0.0158	0.0151	826.9685
Regional Shopping Center	3.52964	0.0381	0.3460	0.2907	2.0800e-003		0.0263	0.0263		0.0263	0.0263		415.2522	415.2522	7.9600e-003	7.6100e-003	417.7794
General Office Building	24.5314	0.2646	2.4050	2.0202	0.0144		0.1828	0.1828		0.1828	0.1828		2,886.0522	2,886.0522	0.0553	0.0529	2,903.6163
Hotel	37.8415	0.4081	3.7100	3.1164	0.0223		0.2820	0.2820		0.2820	0.2820		4,451.9420	4,451.9420	0.0853	0.0816	4,479.0358
Total		0.8172	7.4288	6.2402	0.0446		0.5646	0.5646		0.5646	0.5646		8,914.5776	8,914.5776	0.1709	0.1634	8,968.8302

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Mitigated	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004			0.2343
Unmitigated	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004			0.2343

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1542					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	9.4300e-003	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Total	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1542					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.4300e-003	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343
Total	24.8086	9.3000e-004	0.1031	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2223	0.2223	5.7000e-004		0.2343

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Jack London Square - 2013 Project Emissions (Max. Commercial Scenario)
Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	441.30	1000sqft	10.13	441,300.00	0
Hotel	250.00	Room	8.33	363,000.00	0
Movie Theater (No Matinee)	41.00	1000sqft	0.94	41,000.00	0
Quality Restaurant	15.00	1000sqft	0.34	15,000.00	0
Regional Shopping Center	268.40	1000sqft	6.16	268,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Trip generation rates with incorporation of the 2000 BATS modal split adjustment factors.

Area Coating - No reapplicaton of architectural coatings for building exteriors would be required.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00

tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	ReapplicationRatePercent	10	3
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior	0	150
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	2.37	1.57
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	ST_TR	80.00	26.07
tblVehicleTrips	ST_TR	94.36	74.16
tblVehicleTrips	ST_TR	49.97	43.96
tblVehicleTrips	SU_TR	0.98	0.64
tblVehicleTrips	SU_TR	5.95	4.27
tblVehicleTrips	SU_TR	80.00	26.07
tblVehicleTrips	SU_TR	72.16	56.71
tblVehicleTrips	SU_TR	25.24	22.21
tblVehicleTrips	WD_TR	11.01	7.23
tblVehicleTrips	WD_TR	8.17	5.86
tblVehicleTrips	WD_TR	80.00	26.07
tblVehicleTrips	WD_TR	89.95	70.69
tblVehicleTrips	WD_TR	42.94	37.78

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Area	4.5267	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Energy	0.1491	1.3558	1.1388	8.1300e-003		0.1030	0.1030		0.1030	0.1030	0.0000	5,355.8929	5,355.8929	0.2037	0.0634	5,379.8117
Mobile	12.4267	12.0400	58.0842	0.1720	10.8105	0.2808	11.0913	2.9066	0.2590	3.1656	0.0000	11,439.0428	11,439.0428	0.2776	0.0000	11,444.8722
Waste						0.0000	0.0000		0.0000	0.0000	218.5198	0.0000	218.5198	12.9142	0.0000	489.7169
Water						0.0000	0.0000		0.0000	0.0000	39.8710	261.2654	301.1364	4.1070	0.0991	418.1154
Total	17.1026	13.3959	59.2324	0.1802	10.8105	0.3839	11.1944	2.9066	0.3621	3.2687	258.3908	17,056.2192	17,314.6100	17.5025	0.1625	17,732.5353

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.5267	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Energy	0.1491	1.3558	1.1388	8.1300e-003		0.1030	0.1030		0.1030	0.1030	0.0000	5,355.8929	5,355.8929	0.2037	0.0634	5,379.8117
Mobile	12.4267	12.0400	58.0842	0.1720	10.8105	0.2808	11.0913	2.9066	0.2590	3.1656	0.0000	11,439.0428	11,439.0428	0.2776	0.0000	11,444.8722
Waste						0.0000	0.0000		0.0000	0.0000	218.5198	0.0000	218.5198	12.9142	0.0000	489.7169
Water						0.0000	0.0000		0.0000	0.0000	39.8710	261.2654	301.1364	4.1062	0.0990	418.0518
Total	17.1026	13.3959	59.2324	0.1802	10.8105	0.3839	11.1944	2.9066	0.3621	3.2687	258.3908	17,056.2192	17,314.6100	17.5017	0.1623	17,732.4717

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.2851e-003	0.0985	3.5872e-004

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	12.4267	12.0400	58.0842	0.1720	10.8105	0.2808	11.0913	2.9066	0.2590	3.1656	0.0000	11,439.04 28	11,439.04 28	0.2776	0.0000	11,444.87 22
Unmitigated	12.4267	12.0400	58.0842	0.1720	10.8105	0.2808	11.0913	2.9066	0.2590	3.1656	0.0000	11,439.04 28	11,439.04 28	0.2776	0.0000	11,444.87 22

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	3,190.60	692.84	282.43	5,779,197	5,779,197
Hotel	1,465.00	1,467.50	1,067.50	2,676,188	2,676,188
Movie Theater (No Matinee)	1,068.87	1,068.87	1,068.87	2,012,679	2,012,679
Quality Restaurant	1,060.35	1,112.40	850.65	1,231,038	1,231,038
Regional Shopping Center	10,140.15	11,798.86	5,961.16	17,147,519	17,147,519
Total	16,924.97	16,140.48	9,230.62	28,846,620	28,846,620

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00	66	17	17
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,879.9846	3,879.9846	0.1754	0.0363	3,894.9213
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,879.9846	3,879.9846	0.1754	0.0363	3,894.9213
NaturalGas Mitigated	0.1491	1.3558	1.1388	8.1300e-003		0.1030	0.1030		0.1030	0.1030	0.0000	1,475.9083	1,475.9083	0.0283	0.0271	1,484.8904
NaturalGas Unmitigated	0.1491	1.3558	1.1388	8.1300e-003		0.1030	0.1030		0.1030	0.1030	0.0000	1,475.9083	1,475.9083	0.0283	0.0271	1,484.8904

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Movie Theater (No Matinee)	1.05288e+006	5.6800e-003	0.0516	0.0434	3.1000e-004		3.9200e-003	3.9200e-003		3.9200e-003	3.9200e-003	0.0000	56.1857	56.1857	1.0800e-003	1.0300e-003	56.5276
Quality Restaurant	2.55015e+006	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003	0.0000	136.0857	136.0857	2.6100e-003	2.4900e-003	136.9139
Regional Shopping Center	1.28832e+006	6.9500e-003	0.0632	0.0531	3.8000e-004		4.8000e-003	4.8000e-003		4.8000e-003	4.8000e-003	0.0000	68.7497	68.7497	1.3200e-003	1.2600e-003	69.1681
General Office Building	8.95398e+006	0.0483	0.4389	0.3687	2.6300e-003		0.0334	0.0334		0.0334	0.0334	0.0000	477.8183	477.8183	9.1600e-003	8.7600e-003	480.7262
Hotel	1.38122e+007	0.0745	0.6771	0.5687	4.0600e-003		0.0515	0.0515		0.0515	0.0515	0.0000	737.0689	737.0689	0.0141	0.0135	741.5546

Total		0.1491	1.3558	1.1388	8.1300e-003		0.1030	0.1030		0.1030	0.1030	0.0000	1,475.9083	1,475.9083	0.0283	0.0271	1,484.8904
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Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Quality Restaurant	2.55015e+006	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003	0.0000	136.0857	136.0857	2.6100e-003	2.4900e-003	136.9139
Regional Shopping Center	1.28832e+006	6.9500e-003	0.0632	0.0531	3.8000e-004		4.8000e-003	4.8000e-003		4.8000e-003	4.8000e-003	0.0000	68.7497	68.7497	1.3200e-003	1.2600e-003	69.1681
General Office Building	8.95398e+006	0.0483	0.4389	0.3687	2.6300e-003		0.0334	0.0334		0.0334	0.0334	0.0000	477.8183	477.8183	9.1600e-003	8.7600e-003	480.7262
Hotel	1.38122e+007	0.0745	0.6771	0.5687	4.0600e-003		0.0515	0.0515		0.0515	0.0515	0.0000	737.0689	737.0689	0.0141	0.0135	741.5546
Movie Theater (No Matinee)	1.05288e+006	5.6800e-003	0.0516	0.0434	3.1000e-004		3.9200e-003	3.9200e-003		3.9200e-003	3.9200e-003	0.0000	56.1857	56.1857	1.0800e-003	1.0300e-003	56.5276
Total		0.1491	1.3558	1.1388	8.1300e-003		0.1030	0.1030		0.1030	0.1030	0.0000	1,475.9083	1,475.9083	0.0283	0.0271	1,484.8904

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	6.12524e+006	1,781.9037	0.0806	0.0167	1,788.7635
Hotel	3.3033e+006	960.9679	0.0435	8.9900e-003	964.6673
Movie Theater (No Matinee)	339070	98.6394	4.4600e-003	9.2000e-004	99.0191
Quality Restaurant	453600	131.9574	5.9700e-003	1.2300e-003	132.4654
Regional Shopping Center	3.11612e+006	906.5162	0.0410	8.4800e-003	910.0060

Total		3,879.9846	0.1754	0.0363	3,894.9213
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Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	6.12524e+006	1,781.9037	0.0806	0.0167	1,788.7635
Hotel	3.3033e+006	960.9679	0.0435	8.9900e-003	964.6673
Movie Theater (No Matinee)	339070	98.6394	4.4600e-003	9.2000e-004	99.0191
Quality Restaurant	453600	131.9574	5.9700e-003	1.2300e-003	132.4654
Regional Shopping Center	3.11612e+006	906.5162	0.0410	8.4800e-003	910.0060
Total		3,879.9846	0.1754	0.0363	3,894.9213

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.5267	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Unmitigated	4.5267	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1177					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.4081					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.5000e-004	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Total	4.5267	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1177					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.4081					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.5000e-004	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191
Total	4.5267	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0191

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	301.1364	4.1062	0.0990	418.0518
Unmitigated	301.1364	4.1070	0.0991	418.1154

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	78.4339 / 48.0724	197.2948	2.5636	0.0620	270.3374
Hotel	6.34169 / 0.704632	12.7120	0.2071	4.9800e-003	18.6053
Movie Theater (No Matinee)	16.4657 / 1.051	32.2129	0.5378	0.0129	47.5113
Quality Restaurant	4.55301 / 0.290617	8.9074	0.1487	3.5700e-003	13.1376
Regional Shopping Center	19.8811 / 12.1852	50.0094	0.6498	0.0157	68.5239
Total		301.1364	4.1070	0.0991	418.1154

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	78.4339 / 48.0724	197.2948	2.5631	0.0619	270.2977
Hotel	6.34169 / 0.704632	12.7120	0.2071	4.9700e-003	18.6021

Movie Theater (No Matinee)	16.4657 / 1.051	32.2129	0.5377	0.0129	47.5030
Quality Restaurant	4.55301 / 0.290617	8.9074	0.1487	3.5700e-003	13.1353
Regional Shopping Center	19.8811 / 12.1852	50.0094	0.6497	0.0157	68.5138
Total		301.1364	4.1062	0.0990	418.0518

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	218.5198	12.9142	0.0000	489.7169
Unmitigated	218.5198	12.9142	0.0000	489.7169

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	410.41	83.3095	4.9235	0.0000	186.7020
Hotel	136.88	27.7854	1.6421	0.0000	62.2689
Movie Theater (No Matinee)	233.7	47.4390	2.8036	0.0000	106.3138

Quality Restaurant	13.69	2.7790	0.1642	0.0000	6.2278
Regional Shopping Center	281.82	57.2069	3.3808	0.0000	128.2044
Total		218.5198	12.9141	0.0000	489.7169

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	410.41	83.3095	4.9235	0.0000	186.7020
Hotel	136.88	27.7854	1.6421	0.0000	62.2689
Movie Theater (No Matinee)	233.7	47.4390	2.8036	0.0000	106.3138
Quality Restaurant	13.69	2.7790	0.1642	0.0000	6.2278
Regional Shopping Center	281.82	57.2069	3.3808	0.0000	128.2044
Total		218.5198	12.9141	0.0000	489.7169

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Jack London Square - 2013 Project Emissions (D & F2 Res.) Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments High Rise	665.00	Dwelling Unit	2.18	665,000.00	1902

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage of both Site D and F2 is approximately 2 acres based on footprints.

Vehicle Trips - Trip generation rates with incorporation of the 2000 BATS modal split adjustment factors.

Woodstoves - Assumes no fireplaces for the proposed residential dwelling units.

Area Coating - No reapplicaton of architectural coatings for building exteriors would be required.

Water And Wastewater - No septic tanks for project.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00

tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_Residential_Exterior	448875	0
tblAreaCoating	ReapplicationRatePercent	10	3
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblFireplaces	FireplaceDayYear	4.29	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	92.40	0.00
tblFireplaces	NumberGas	365.75	0.00
tblFireplaces	NumberNoFireplace	206.15	0.00
tblFireplaces	NumberWood	93.10	0.00
tblLandUse	LotAcreage	10.73	2.18
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	5.27
tblVehicleTrips	SU_TR	6.07	4.47
tblVehicleTrips	WD_TR	6.59	4.85
tblWater	AerobicPercent	87.46	92.62
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	7.38
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	3.33	0.00
tblWoodstoves	NumberNoncatalytic	3.33	0.00
tblWoodstoves	WoodstoveDayYear	10.82	0.00
tblWoodstoves	WoodstoveWoodMass	954.80	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
	Area	2.8379	0.0568	4.9204	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.0657	8.0657	7.6800e-003	0.0000
Energy	0.0318	0.2713	0.1154	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	1,013.6012	1,013.6012	0.0377	0.0123	1,018.2058
Mobile	1.1530	2.8325	13.0094	0.0426	2.7014	0.0687	2.7701	0.7263	0.0633	0.7897	0.0000	2,832.8902	2,832.8902	0.0678	0.0000	2,834.3141
Waste						0.0000	0.0000		0.0000	0.0000	62.0949	0.0000	62.0949	3.6697	0.0000	139.1588
Water						0.0000	0.0000		0.0000	0.0000	15.3293	96.0146	111.3440	1.2191	0.0342	147.5576
Total	4.0227	3.1605	18.0451	0.0446	2.7014	0.1180	2.8194	0.7263	0.1127	0.8390	77.4243	3,950.5717	4,027.9959	5.0019	0.0465	4,147.4632

Mitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area	2.8379	0.0568	4.9204	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.0657	8.0657	7.6800e-003	0.0000	8.2269
Energy	0.0318	0.2713	0.1154	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	1,013.6012	1,013.6012	0.0377	0.0123	1,018.2058
Mobile	1.1530	2.8325	13.0094	0.0426	2.7014	0.0687	2.7701	0.7263	0.0633	0.7897	0.0000	2,832.8902	2,832.8902	0.0678	0.0000	2,834.3141
Waste						0.0000	0.0000		0.0000	0.0000	62.0949	0.0000	62.0949	3.6697	0.0000	139.1588
Water						0.0000	0.0000		0.0000	0.0000	15.3293	96.0146	111.3440	1.2188	0.0342	147.5332
Total	4.0227	3.1605	18.0451	0.0446	2.7014	0.1180	2.8194	0.7263	0.1127	0.8390	77.4243	3,950.5717	4,027.9959	5.0017	0.0465	4,147.4388

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.11	0.00

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1530	2.8325	13.0094	0.0426	2.7014	0.0687	2.7701	0.7263	0.0633	0.7897	0.0000	2,832.8902	2,832.8902	0.0678	0.0000	2,834.3141
Unmitigated	1.1530	2.8325	13.0094	0.0426	2.7014	0.0687	2.7701	0.7263	0.0633	0.7897	0.0000	2,832.8902	2,832.8902	0.0678	0.0000	2,834.3141

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	3,225.25	3,504.55	2972.55	7,208,422	7,208,422
Total	3,225.25	3,504.55	2,972.55	7,208,422	7,208,422

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.534279	0.061728	0.163535	0.108433	0.030557	0.004584	0.021278	0.063079	0.001942	0.003382	0.005694	0.000164	0.001344

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated:						0.0000	0.0000		0.0000	0.0000	0.0000	699.4116	699.4116	0.0316	6.5400e-003	702.1041
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	699.4116	699.4116	0.0316	6.5400e-003	702.1041
NaturalGas Mitigated	0.0318	0.2713	0.1154	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	314.1896	314.1896	6.0200e-003	5.7600e-003	316.1017
NaturalGas Unmitigated	0.0318	0.2713	0.1154	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	314.1896	314.1896	6.0200e-003	5.7600e-003	316.1017

5.2 Energy by Land Use - NaturalGas Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	5.88769e+006	0.0318	0.2713	0.1154	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	314.1896	314.1896	6.0200e-003	5.7600e-003	316.1017
Total		0.0318	0.2713	0.1154	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	314.1896	314.1896	6.0200e-003	5.7600e-003	316.1017

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	5.88769e+006	0.0318	0.2713	0.1154	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	314.1896	314.1896	6.0200e-003	5.7600e-003	316.1017
Total		0.0318	0.2713	0.1154	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	314.1896	314.1896	6.0200e-003	5.7600e-003	316.1017

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	2.40421e+006	699.4116	0.0316	6.5400e-003	702.1041
Total		699.4116	0.0316	6.5400e-003	702.1041

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	2.40421e+006	699.4116	0.0316	6.5400e-003	702.1041
Total		699.4116	0.0316	6.5400e-003	702.1041

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8379	0.0568	4.9204	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.0657	8.0657	7.6800e-003	0.0000	8.2269
Unmitigated	2.8379	0.0568	4.9204	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.0657	8.0657	7.6800e-003	0.0000	8.2269

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0936					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.5972					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1471	0.0568	4.9204	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.0657	8.0657	7.6800e-003	0.0000	8.2269
Total	2.8379	0.0568	4.9204	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.0657	8.0657	7.6800e-003	0.0000	8.2269

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0936					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.5972					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1471	0.0568	4.9204	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.0657	8.0657	7.6800e-003	0.0000	8.2269
Total	2.8379	0.0568	4.9204	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.0657	8.0657	7.6800e-003	0.0000	8.2269

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	111.3440	1.2188	0.0342	147.5332
Unmitigated	111.3440	1.2191	0.0342	147.5576

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	43.3274 / 27.3151	111.3440	1.2191	0.0342	147.5576
Total		111.3440	1.2191	0.0342	147.5576

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	43.3274 / 27.3151	111.3440	1.2188	0.0342	147.5332
Total		111.3440	1.2188	0.0342	147.5332

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
--	-----------	-----	-----	------

	MT/yr			
Mitigated	62.0949	3.6697	0.0000	139.1588
Unmitigated	62.0949	3.6697	0.0000	139.1588

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	305.9	62.0949	3.6697	0.0000	139.1588
Total		62.0949	3.6697	0.0000	139.1588

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	305.9	62.0949	3.6697	0.0000	139.1588
Total		62.0949	3.6697	0.0000	139.1588

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Vegetation

APPENDIX D

Health Risk Technical Data

Health Risk Assessment Technical Background

Construction

Construction Emission Estimates

The PM10 emission estimates were limited to exhaust PM10 emissions occurring onsite.

Construction Health Risk Results

Construction Health Risks												
		Scenario	Modeled Concentrations (ug/m3)	DPM Cancer Potency Factor (slope factor)	Cancer Risk (in a million)					DPM Chronic REL	DPM Chronic HI	PM2.5
					3rd Tri-Birth	0 to 2	2 to 16	16 to 70	Total			
		Site D	3.20E-02	1.10E+00	3.32E-07	5.69E-06	0.00E+00	0.00E+00	6.02E-06	5	0.0064	0.032
		Site F2	4.40E-02	1.10E+00	4.57E-07	7.82E-06	0.00E+00	0.00E+00	8.27E-06	5	0.0088	0.044
TOTALS								D	6.02	Per million		
								F2	8.27	Per million		

Cancer Risk Inputs								
Age Category	Daily Breathing Rate	Inhalation Absorption Rate	days/year	years		Average Time days	Child Risk Factor	Fraction of Time at Home
3rd tri - birth	361	1	262	0.3	1.00E-06	25550	10	0.85
0 to 2	1090	1	262	1.7	1.00E-06	25550	10	0.85
2 to 16	745	1	262	0	1.00E-06	25550	3	0.72
16 to 70	290	1	262	0	1.00E-06	25550	1	0.73

I. 2007										
A. AMTRAK TRAINS - DPM emissions (g/hr)										
				Throttle Notches						
Model	fraction	# of trains	3	4	5	6	7	8		
GP-60	0.2	7.6	2223	2361.548	2899.932	5010.3	5579.616	7053.18		
GP-40	0.35	13.3	3010.854	3438.05	4469.199	7340.004	8493.912	10923.822		
Dash-9	0.2	7.6	1766.4847	1926.4115	3273.0859	4531.2416	5104.8425	4888.8246		
Dash-8	0.25	9.5	2768.889	2785.02	3113.568	3548.44	4459.357	5843.355		
TOTAL	1	38	9,769.23	10,511.03	13,755.78	20,429.99	23,637.73	28,709.18		
fraction of time in each throttle			0	0.2	0.50	0.15	0.10	0.05	1	
TOTAL			0	2,102.21	6,877.89	3,064.50	2,363.77	1,435.46	15,843.83	g/hr/day
distance (miles)		2								
hours			0.03333	0.02500	0.01667	0.01250	0.01250	0.01250		
TOTAL (AMTRAK)			0.00	52.56	114.63	38.31	29.55	17.94	252.98	grams/day
									0.56	lbs/day

B. FREIGHT TRAINS - DPM emissions (g/hr)										
Throttle Notches										
Model	fraction	# of engines	3	4	5	6	7	8		
GP-40	0.6	7.2	1629.936	1861.2	2419.416	3973.536	4598.208	5913.648		
GP-38	0.2	2.4	446.4	508.8	640.8	1000.8	1111.2	1459.2		
Dash-8	0.2	2.4	699.5088	703.584	786.5856	896.448	1126.5744	1476.216		
TOTAL	1	12	2,775.84	3,073.58	3,846.80	5,870.78	6,835.98	8,849.06		
fraction of time in each throttle			0	0.2	0.50	0.15	0.10	0.05	1	
TOTAL			0	614.72	1,923.40	880.62	683.60	442.45	4,544.79	g/hr
distance (miles)		2								
hours			0.03333	0.02500	0.01667	0.01250	0.01250	0.01250		
TOTAL (Freight)			0.00	15.37	32.06	11.01	8.54	5.53	72.51	grams/day
									0.16	lbs/day
GRAND TOTAL									325.49	grams/day
									0.72	lbs/day
									261.92	lbs/year
									0.00377	grams/sec

Ferries

Source Tests	Peralta		Golden Gate		Mare Island		3-boat average		
	Idle-Neutral	Idle -Ahead	Idle-Neutral	Idle - Ahead	Idle-Neutral	Idle - Ahead	Idle-Neutral	Idle-Ahead	total
grams/engine/hr	10	40	5	32	6	8			
engines	2	2	2	2	2	2			
grams/hour	20	80	10	64	12	16			
hours/operation	0.08	0.08	0.08	0.08	0.08	0.08			
grams/operation	1.67	6.67	0.83	5.33	1.00	1.33	1.17	4.44	5.61
Average grams DPM/operation		5.61	<- Use This						
Operations/day		34.44							
grams PM10/day		193.27							
max hours/day		15							
seconds/day		54000							
grams/second weekday		0.00358	ratio						
grams/second weekend		0.00187	0.52						

Ferry Schedule (from San Francisco Bay Ferry:
<http://sanfranciscobayferry.com/>)

		Weekday to	weekend to		
6am-9:30pm	Ferry Bldg	13	9	9am- 11:30pm	
	ssanfran	4			
	AT&T	0.2			
	totals	17.2	9		
		6am - 6pm			
	Total one-way	17.2	9		

Dispersion Modeling Results and Health Risk Calculations

Scenario	Modeled Concentrations (ug/m3)	DPM Cancer Potency Factor (slope factor)	Cancer Risk (in a million)					DPM Chronic REL	DPM Chronic HI	PM2.5 (µg/m ³)
			3rd Tri-Birth	0 to 2	2 to 16	16 to 70	Total			
DPM - Site D Train	8.90E-02	1.10E+00	9.24E-07	1.86E-05	2.26E-05	1.15E-05	5.36E-05	5	0.0178	0.089
DPM - Site D Ferry	2.00E-02	1.10E+00	2.08E-07	4.18E-06	5.08E-06	2.58E-06	1.20E-05	5	0.004	0.020
DPM - Site F2 Train	4.70E-02	1.10E+00	4.88E-07	9.82E-06	1.19E-05	6.06E-06	2.83E-05	5	0.0094	0.047
DPM -Site F2 Ferry	5.00E-03	1.10E+00	5.19E-08	1.05E-06	1.27E-06	6.45E-07	3.01E-06	5	0.001	0.005

Cancer Risk Inputs								
Age Category	Daily Breathing Rate	Inhalation Absorption Rate	days/year	years		Average Time days	Child Risk Factor	Fraction of Time at Home
3rd tri - birth	361	1	262	0.3	1.00E-06	25550	10	0.85
0 to 2	1090	1	262	2	1.00E-06	25550	10	0.85
2 to 16	745	1	262	14	1.00E-06	25550	3	0.72
16 to 70	290	1	262	54	1.00E-06	25550	1	0.73

```

**
*****
**
** ISCST3 Input Produced by:
** AERMOD View Ver. 8.5.0
** Lakes Environmental Software Inc.
** Date: 3/20/2014
** File: C:\Lakes\AERMOD View\jls\jlscnst\jlscnst.INP
**
*****
**
**
*****
** ISCST3 Control Pathway
*****
**
**
CO STARTING
  TITLEONE C:\Lakes\AERMOD View\jls\jlscnst\jlscnst.isc
  MODELOPT DFAULT CONC  RURAL
  AVERTIME 1 PERIOD
  POLLUTID SO2
  TERRHGTS ELEV
  RUNORNOT RUN
  ERRORFIL jlscnst.err
CO FINISHED
**
*****
** ISCST3 Source Pathway
*****
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
  LOCATION AREA1      AREA      563618.840  4183318.760      3.620
  LOCATION AREA2      AREA      564026.970  4183083.860     -0.360
** Source Parameters **

```


SRCPARAM AREA1	1.4532E-06	10.668	59.030	48.960	-67.203	0.000
SRCPARAM AREA2	1.2786E-06	10.668	69.950	46.960	-61.621	0.000

** Variable Emissions Type: "By Season / Hour / Day (SHRDOW)"

** Variable Emission Scenario: "Scenario 1"

** WeekDays:

** Winter

EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	1.0	1.0	1.0	1.0	1.0
EMISFACT AREA1	SHRDOW	1.0	1.0	1.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0

** Spring

EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	1.0	1.0	1.0	1.0	1.0
EMISFACT AREA1	SHRDOW	1.0	1.0	1.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0

** Summer

EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	1.0	1.0	1.0	1.0	1.0
EMISFACT AREA1	SHRDOW	1.0	1.0	1.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0

** Fall

EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	1.0	1.0	1.0	1.0	1.0
EMISFACT AREA1	SHRDOW	1.0	1.0	1.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0

** Saturday:

** Winter

EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0

** Spring

EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0

** Summer

	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Fall								
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Sunday:								
**	Winter								
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Spring								
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Summer								
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Fall								
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA1	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	WeekDays:								
**	Winter								
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	1.0	1.0	1.0	1.0	1.0
	EMISFACT	AREA2	SHRDOW	1.0	1.0	1.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Spring								
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0

	EMISFACT	AREA2	SHRDOW	0.0	1.0	1.0	1.0	1.0	1.0
	EMISFACT	AREA2	SHRDOW	1.0	1.0	1.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Summer								
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	1.0	1.0	1.0	1.0	1.0
	EMISFACT	AREA2	SHRDOW	1.0	1.0	1.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Fall								
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	1.0	1.0	1.0	1.0	1.0
	EMISFACT	AREA2	SHRDOW	1.0	1.0	1.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Saturday:								
**	Winter								
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Spring								
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Summer								
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Fall								
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
**	Sunday:								
**	Winter								
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0
	EMISFACT	AREA2	SHRDOW	0.0	0.0	0.0	0.0	0.0	0.0

```

EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
** Spring
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
** Summer
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
** Fall
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT AREA2      SHRDOWN 0.0 0.0 0.0 0.0 0.0 0.0
SRCGROUP SRCGP1     AREA1
SRCGROUP SRCGP2     AREA2
SRCGROUP ALL

```

SO FINISHED

**

** ISCST3 Receptor Pathway

**

**

RE STARTING

** DESCRREC "" ""

DISCCART	564091.08	4183096.86	1.84
DISCCART	564084.36	4183085.33	1.89
DISCCART	564062.27	4183042.12	2.22
DISCCART	564051.71	4183022.91	2.09
DISCCART	564129.49	4183056.52	1.53
DISCCART	564098.77	4183012.35	2.99
DISCCART	564186.15	4183049.80	1.49
DISCCART	564143.90	4182960.50	1.75
DISCCART	564204.40	4183052.68	0.91

DISCCART	564174.63	4183025.79	1.29
DISCCART	563740.58	4183465.60	4.87
DISCCART	563752.10	4183450.24	4.21
DISCCART	563746.34	4183485.77	4.82
DISCCART	563758.83	4183500.17	5.01
DISCCART	563761.71	4183444.48	3.87
DISCCART	563761.71	4183482.89	4.65

RE FINISHED

**

** ISCST3 Meteorology Pathway

**

**

ME STARTING

INPUTFIL ..\POK98600.ASC

ANEMHGHT 10 METERS

SURFDATA 1805 1998

UAIRDATA 1805 1998

ME FINISHED

**

** ISCST3 Output Pathway

**

**

OU STARTING

RECTABLE ALLAVE 1ST

RECTABLE 1 1ST

** Auto-Generated Plotfiles

PLOTFILE 1 ALL 1ST JLSCNST.IS\01H1GALL.PLT 31

PLOTFILE 1 SRCGP1 1ST JLSCNST.IS\01H1G001.PLT 32

PLOTFILE 1 SRCGP2 1ST JLSCNST.IS\01H1G002.PLT 33

PLOTFILE PERIOD ALL JLSCNST.IS\PE00GALL.PLT 34

PLOTFILE PERIOD SRCGP1 JLSCNST.IS\PE00G001.PLT 35

PLOTFILE PERIOD SRCGP2 JLSCNST.IS\PE00G002.PLT 36

OU FINISHED

```
*****  
*** SETUP Finishes Successfully ***  
*****
```

*** ISCST3 - VERSION 02035 *** *** C:\Lakes\AERMOD View\jls\jlscnst\jlscnst.isc
*** 03/20/14

*** 13:17:03

**MODELOPTs:

PAGE 1

CONC RURAL ELEV DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

-- SCAVENGING/DEPOSITION LOGIC --

**Model Uses NO DRY DEPLETION. DDPLETE = F

**Model Uses NO WET DEPLETION. WDPLETE = F

**NO WET SCAVENGING Data Provided.

**NO GAS DRY DEPOSITION Data Provided.

**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:

1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Accepts Receptors on ELEV Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 2 Source(s); 3 Source Group(s); and 16 Receptor(s)

**The Model Assumes A Pollutant Type of: SO2

**Model Set To Continue RUNNING After the Setup Testing.

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor

Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit

Factor = 0.10000E+07

Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 1.2 MB of RAM.

**Input Runstream File: jlscnst.INP

**Output Print File: jlscnst.OUT

**Detailed Error/Message File: jlscnst.err

*** ISCST3 - VERSION 02035 ***
*** 03/20/14

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**MODELOPTs:

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CONC

RURAL ELEV

DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID

SOURCE IDs

SRCGP1 AREA1 ,

SRCGP2 AREA2 ,

ALL AREA1 , AREA2 ,

*** ISCST3 - VERSION 02035 *** *** C:\Lakes\AERMOD View\jls\jlscnst\jlscnst.isc
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**MODELOPTs:

PAGE 4

CONC

RURAL ELEV

DFAULT

* SOURCE EMISSION RATE SCALARS WHICH VARY SEASONALLY, DIURNALLY AND BY DAY OF WEEK
(SHRDOW) *

SOURCE ID = AREA1 ; SOURCE TYPE = AREA :
HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR

SEASON = WINTER; DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00 6 .0000E+00 7
.0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01 13 .1000E+01 14 .1000E+01 15
.1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00 22 .0000E+00 23
.0000E+00 24 .0000E+00

SEASON = SPRING; DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00 6 .0000E+00 7
.0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01 13 .1000E+01 14 .1000E+01 15
.1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00 22 .0000E+00 23
.0000E+00 24 .0000E+00

SEASON = SUMMER; DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00 6 .0000E+00 7
.0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01 13 .1000E+01 14 .1000E+01 15
.1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00 22 .0000E+00 23
.0000E+00 24 .0000E+00

SEASON = FALL ; DAY OF WEEK = WEEKDAY

