

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	34	2	10	38	4
Future Vol, veh/h	6	34	2	10	38	4
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	7	37	2	11	41	4




















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	45	0	43
Stage 1	-	-	-	-	27
Stage 2	-	-	-	-	16
Critical Hdwy	-	-	4.13	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.227	-	3.527
Pot Cap-1 Maneuver	-	-	1557	-	965
Stage 1	-	-	-	-	993
Stage 2	-	-	-	-	1004
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1557	-	961
Mov Cap-2 Maneuver	-	-	-	-	961
Stage 1	-	-	-	-	991
Stage 2	-	-	-	-	1002

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	968	-	-	1557	-
HCM Lane V/C Ratio	0.047	-	-	0.001	-
HCM Control Delay (s)	8.9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 Signalized Intersection Summary
2: A St & Rockaway Ln/4th St

1744 Ruby St
Existing Conditions - AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	27	4	91	67	215	7	1279	58	257	1442	52
Future Volume (veh/h)	22	27	4	91	67	215	7	1279	58	257	1442	52
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	23	28	1	95	70	29	7	1332	58	268	1502	53
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	93	94	3	186	113	272	190	1772	77	311	2026	71
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.11	0.52	0.52	0.18	0.59	0.59
Sat Flow, veh/h	211	535	15	715	645	1555	1757	3417	149	1757	3449	121
Grp Volume(v), veh/h	52	0	0	165	0	29	7	682	708	268	761	794
Grp Sat Flow(s),veh/h/ln	760	0	0	1360	0	1555	1757	1752	1813	1757	1752	1818
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	1.5	0.3	28.4	28.6	13.7	29.3	29.6
Cycle Q Clear(g_c), s	11.5	0.0	0.0	11.2	0.0	1.5	0.3	28.4	28.6	13.7	29.3	29.6
Prop In Lane	0.44		0.02	0.58		1.00	1.00		0.08	1.00		0.07
Lane Grp Cap(c), veh/h	189	0	0	299	0	272	190	909	940	311	1030	1068
V/C Ratio(X)	0.28	0.00	0.00	0.55	0.00	0.11	0.04	0.75	0.75	0.86	0.74	0.74
Avail Cap(c_a), veh/h	435	0	0	543	0	520	303	909	940	588	1154	1197
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	0.0	0.0	35.9	0.0	32.1	37.0	17.6	17.6	37.0	13.9	14.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.6	0.0	0.2	0.1	3.5	3.5	7.1	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	4.1	0.0	0.6	0.2	14.5	15.1	7.2	14.6	15.4
LnGrp Delay(d),s/veh	33.6	0.0	0.0	37.5	0.0	32.3	37.1	21.1	21.1	44.1	16.2	16.2
LnGrp LOS	C			D		C	D	C	C	D	B	B
Approach Vol, veh/h		52			194			1397			1823	
Approach Delay, s/veh		33.6			36.7			21.2			20.3	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	58.4		20.2	20.4	52.0		20.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	61.0		31.0	31.0	46.0		31.0				
Max Q Clear Time (g_c+I1), s	2.3	31.6		13.2	15.7	30.6		13.5				
Green Ext Time (p_c), s	0.0	22.8		1.2	0.7	13.9		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay				21.8								
HCM 2010 LOS				C								

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	67	59	1457	1677	1
Future Vol, veh/h	0	67	59	1457	1677	1
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	72	63	1567	1803	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2719	907	1809	0	-	0
Stage 1	1809	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	16	277	332	-	-	-
Stage 1	115	-	-	-	-	-
Stage 2	350	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	13	276	332	-	-	-
Mov Cap-2 Maneuver	79	-	-	-	-	-
Stage 1	114	-	-	-	-	-
Stage 2	282	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.6	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	332	-	276	-	-
HCM Lane V/C Ratio	0.191	-	0.261	-	-
HCM Control Delay (s)	18.4	-	22.6	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.7	-	1	-	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	4	0	2	1442	1652	10
Future Vol, veh/h	4	0	2	1442	1652	10
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	4	0	2	1502	1721	10
























Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2482	867	1732	0	-	0
Stage 1	1727	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	24	294	356	-	-	-
Stage 1	127	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	24	294	356	-	-	-
Mov Cap-2 Maneuver	24	-	-	-	-	-
Stage 1	127	-	-	-	-	-
Stage 2	419	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	184.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	356	-	24	-	-
HCM Lane V/C Ratio	0.006	-	0.174	-	-
HCM Control Delay (s)	15.2	-	184.2	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

HCM 2010 Signalized Intersection Summary
5: Redwood Rd & Grove Way

1744 Ruby St
Existing Conditions - AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	154	12	584	122	183	24	885	532	166	1064	63
Future Volume (veh/h)	87	154	12	584	122	183	24	885	532	166	1064	63
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.96	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1845	1845	1824	1845	1845	1845	1845	1845	1845	1845	1845	1824
Adj Flow Rate, veh/h	91	160	9	699	0	0	25	922	554	173	1108	64
Adj No. of Lanes	1	1	0	2	0	1	1	3	1	2	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	217	214	12	795	0	355	27	1123	685	1025	1721	99
Arrive On Green	0.12	0.12	0.12	0.23	0.00	0.00	0.02	0.22	0.22	0.30	0.51	0.51
Sat Flow, veh/h	1757	1727	97	3514	0	1568	1757	5036	1506	3408	3364	194
Grp Volume(v), veh/h	91	0	169	699	0	0	25	922	554	173	577	595
Grp Sat Flow(s),veh/h/ln	1757	0	1825	1757	0	1568	1757	1679	1506	1704	1752	1806
Q Serve(g_s), s	6.2	0.0	11.6	25.0	0.0	0.0	1.8	22.6	29.0	4.9	31.2	31.2
Cycle Q Clear(g_c), s	6.2	0.0	11.6	25.0	0.0	0.0	1.8	22.6	29.0	4.9	31.2	31.2
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	217	0	226	795	0	355	27	1123	685	1025	897	924
V/C Ratio(X)	0.42	0.00	0.75	0.88	0.00	0.00	0.93	0.82	0.81	0.17	0.64	0.64
Avail Cap(c_a), veh/h	487	0	505	1054	0	470	108	1123	685	1025	897	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	0.0	55.0	48.6	0.0	0.0	63.9	48.0	28.0	33.5	23.1	23.1
Incr Delay (d2), s/veh	0.5	0.0	1.9	5.7	0.0	0.0	34.1	6.8	10.0	0.0	3.5	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	6.0	12.8	0.0	0.0	1.2	11.2	21.7	2.3	15.9	16.4
LnGrp Delay(d),s/veh	53.1	0.0	56.9	54.3	0.0	0.0	98.1	54.8	38.0	33.5	26.7	26.6
LnGrp LOS	D		E	D			F	D	D	C	C	C
Approach Vol, veh/h		260			699			1501			1345	
Approach Delay, s/veh		55.6			54.3			49.3			27.5	
Approach LOS		E			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	70.5		20.1	43.5	33.0		33.4				
Change Period (Y+Rc), s	3.7	4.1		* 4.2	4.1	* 4.1		4.6				
Max Green Setting (Gmax), s	8.3	30.9		* 36	10.3	* 29		38.4				
Max Q Clear Time (g_c+I1), s	3.8	33.2		13.6	6.9	31.0		27.0				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.2	0.0		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			42.9									
HCM 2010 LOS			D									
Notes												

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	21	4	6	25	2
Future Vol, veh/h	11	21	4	6	25	2
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	21	4	6	25	2




















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	32	0	37
Stage 1	-	-	-	-	22
Stage 2	-	-	-	-	15
Critical Hdwy	-	-	4.13	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.227	-	3.527
Pot Cap-1 Maneuver	-	-	1574	-	973
Stage 1	-	-	-	-	998
Stage 2	-	-	-	-	1005
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1574	-	969
Mov Cap-2 Maneuver	-	-	-	-	969
Stage 1	-	-	-	-	998
Stage 2	-	-	-	-	1001

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	975	-	-	1574	-
HCM Lane V/C Ratio	0.028	-	-	0.003	-
HCM Control Delay (s)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 Signalized Intersection Summary
2: A St & Rockaway Ln/4th St

1744 Ruby St
Existing Conditions - PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	27	7	78	15	247	6	1386	68	240	1378	15
Future Volume (veh/h)	36	27	7	78	15	247	6	1386	68	240	1378	15
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	37	28	4	80	15	27	6	1429	68	247	1421	15
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	87	10	244	39	231	201	1860	88	292	2125	22
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.11	0.55	0.55	0.17	0.60	0.60
Sat Flow, veh/h	472	583	65	1123	264	1543	1757	3402	161	1757	3552	37
Grp Volume(v), veh/h	69	0	0	95	0	27	6	734	763	247	701	735
Grp Sat Flow(s),veh/h/ln	1119	0	0	1387	0	1543	1757	1752	1811	1757	1752	1837
Q Serve(g_s), s	1.6	0.0	0.0	0.0	0.0	1.3	0.3	28.5	28.8	11.9	23.4	23.4
Cycle Q Clear(g_c), s	7.1	0.0	0.0	5.5	0.0	1.3	0.3	28.5	28.8	11.9	23.4	23.4
Prop In Lane	0.54		0.06	0.84		1.00	1.00		0.09	1.00		0.02
Lane Grp Cap(c), veh/h	231	0	0	283	0	231	201	958	991	292	1049	1099
V/C Ratio(X)	0.30	0.00	0.00	0.34	0.00	0.12	0.03	0.77	0.77	0.85	0.67	0.67
Avail Cap(c_a), veh/h	542	0	0	572	0	548	322	958	991	624	1224	1284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	0.0	0.0	33.8	0.0	32.1	34.3	15.4	15.5	35.3	11.7	11.7
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.7	0.0	0.2	0.1	3.8	3.8	6.7	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	2.1	0.0	0.6	0.1	14.7	15.2	6.3	11.4	12.0
LnGrp Delay(d),s/veh	35.0	0.0	0.0	34.5	0.0	32.4	34.4	19.2	19.2	42.0	12.9	12.8
LnGrp LOS	D			C		C	C	B	B	D	B	B
Approach Vol, veh/h		69			122			1503			1683	
Approach Delay, s/veh		35.0			34.0			19.3			17.1	
Approach LOS		D			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	56.2		17.1	18.5	51.7		17.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	61.0		31.0	31.0	46.0		31.0				
Max Q Clear Time (g_c+I1), s	2.3	25.4		7.5	13.9	30.8		9.1				
Green Ext Time (p_c), s	0.0	26.8		1.0	0.6	13.7		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				19.1								
HCM 2010 LOS				B								

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	1	52	66	1604	1586	5
Future Vol, veh/h	1	52	66	1604	1586	5
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	53	67	1637	1618	5

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2575	813	1624	0	-	0
Stage 1	1622	-	-	-	-	-
Stage 2	953	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	21	319	392	-	-	-
Stage 1	145	-	-	-	-	-
Stage 2	333	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	319	392	-	-	-
Mov Cap-2 Maneuver	94	-	-	-	-	-
Stage 1	145	-	-	-	-	-
Stage 2	276	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.3	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	392	-	305	-	-
HCM Lane V/C Ratio	0.172	-	0.177	-	-
HCM Control Delay (s)	16.1	-	19.3	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	0.6	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	1	3	3	1613	1582	9
Future Vol, veh/h	1	3	3	1613	1582	9
Conflicting Peds, #/hr	0	0	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	3	3	1680	1648	9
























Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2503	833	1661	0	-	0
Stage 1	1657	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	23	310	379	-	-	-
Stage 1	139	-	-	-	-	-
Stage 2	379	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	309	379	-	-	-
Mov Cap-2 Maneuver	23	-	-	-	-	-
Stage 1	138	-	-	-	-	-
Stage 2	375	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	55.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	379	-	75	-	-
HCM Lane V/C Ratio	0.008	-	0.056	-	-
HCM Control Delay (s)	14.6	-	55.8	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 2010 Signalized Intersection Summary
5: Redwood Rd & Grove Way

1744 Ruby St
Existing Conditions - PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	128	8	422	121	186	23	915	686	227	1134	141
Future Volume (veh/h)	117	128	8	422	121	186	23	915	686	227	1134	141
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.95	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1845	1845	1824	1845	1845	1845	1845	1845	1845	1845	1845	1824
Adj Flow Rate, veh/h	124	136	7	289	353	0	24	973	730	241	1206	146
Adj No. of Lanes	1	1	0	1	1	1	1	3	1	2	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	218	216	11	392	411	350	26	1043	653	1120	1646	199
Arrive On Green	0.12	0.12	0.12	0.22	0.22	0.00	0.01	0.21	0.21	0.33	0.52	0.52
Sat Flow, veh/h	1757	1735	89	1757	1845	1568	1757	5036	1491	3408	3142	379
Grp Volume(v), veh/h	124	0	143	289	353	0	24	973	730	241	671	681
Grp Sat Flow(s),veh/h/ln	1757	0	1825	1757	1845	1568	1757	1679	1491	1704	1752	1769
Q Serve(g_s), s	9.3	0.0	10.4	21.4	25.7	0.0	1.9	26.6	29.0	7.2	41.3	41.8
Cycle Q Clear(g_c), s	9.3	0.0	10.4	21.4	25.7	0.0	1.9	26.6	29.0	7.2	41.3	41.8
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	218	0	227	392	411	350	26	1043	653	1120	918	926
V/C Ratio(X)	0.57	0.00	0.63	0.74	0.86	0.00	0.92	0.93	1.12	0.22	0.73	0.74
Avail Cap(c_a), veh/h	452	0	469	514	540	459	100	1043	653	1120	918	926
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	0.0	58.3	50.6	52.3	0.0	68.9	54.5	31.3	34.0	25.7	25.8
Incr Delay (d2), s/veh	0.9	0.0	1.1	2.5	8.5	0.0	33.5	15.7	72.4	0.0	5.1	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	5.4	10.7	14.1	0.0	1.2	13.9	38.3	3.4	21.2	21.6
LnGrp Delay(d),s/veh	58.6	0.0	59.3	53.0	60.8	0.0	102.4	70.3	103.7	34.0	30.8	31.0
LnGrp LOS	E		E	D	E		F	E	F	C	C	C
Approach Vol, veh/h		267			642			1727			1593	
Approach Delay, s/veh		59.0			57.3			84.9			31.4	
Approach LOS		E			E			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	77.3		21.4	50.4	33.0		35.2				
Change Period (Y+Rc), s	3.7	4.1		* 4.2	4.1	* 4.1		4.6				
Max Green Setting (Gmax), s	8.3	38.9		* 36	18.3	* 29		40.4				
Max Q Clear Time (g_c+I1), s	3.9	43.8		12.4	9.2	31.0		27.7				
Green Ext Time (p_c), s	0.0	0.0		0.7	3.1	0.0		1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			58.9									
HCM 2010 LOS			E									
Notes												

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	34	2	13	40	4
Future Vol, veh/h	12	34	2	13	40	4
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	13	37	2	14	43	4





















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	52	0	53
Stage 1	-	-	-	-	34
Stage 2	-	-	-	-	19
Critical Hdwy	-	-	4.13	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.227	-	3.527
Pot Cap-1 Maneuver	-	-	1548	-	953
Stage 1	-	-	-	-	986
Stage 2	-	-	-	-	1001
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1548	-	949
Mov Cap-2 Maneuver	-	-	-	-	949
Stage 1	-	-	-	-	984
Stage 2	-	-	-	-	999

Approach	EB	WB	NB
HCM Control Delay, s	0	1	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	956	-	-	1548	-
HCM Lane V/C Ratio	0.05	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 2010 Signalized Intersection Summary
 2: A St & Rockaway Ln/4th St

1744 Ruby St
 Existing with Project - AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	27	4	91	67	215	7	1281	58	258	1448	52
Future Volume (veh/h)	22	27	4	91	67	215	7	1281	58	258	1448	52
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	23	28	1	95	70	127	7	1334	60	269	1508	52
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	93	94	3	188	115	276	189	1761	79	311	2023	70
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.11	0.52	0.52	0.18	0.59	0.59
Sat Flow, veh/h	211	529	15	717	649	1555	1757	3411	153	1757	3452	119
Grp Volume(v), veh/h	52	0	0	165	0	127	7	684	710	269	764	796
Grp Sat Flow(s),veh/h/ln	755	0	0	1366	0	1555	1757	1752	1812	1757	1752	1819
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	6.8	0.3	28.9	29.0	13.9	29.8	30.0
Cycle Q Clear(g_c), s	11.5	0.0	0.0	11.2	0.0	6.8	0.3	28.9	29.0	13.9	29.8	30.0
Prop In Lane	0.44		0.02	0.58		1.00	1.00		0.08	1.00		0.07
Lane Grp Cap(c), veh/h	190	0	0	304	0	276	189	904	935	311	1027	1066
V/C Ratio(X)	0.27	0.00	0.00	0.54	0.00	0.46	0.04	0.76	0.76	0.86	0.74	0.75
Avail Cap(c_a), veh/h	417	0	0	540	0	517	302	904	935	585	1148	1191
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	0.0	0.0	35.9	0.0	34.3	37.3	17.9	17.9	37.2	14.1	14.2
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.5	0.0	1.2	0.1	3.7	3.6	7.1	2.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	4.1	0.0	3.0	0.2	14.8	15.3	7.3	14.9	15.5
LnGrp Delay(d),s/veh	33.6	0.0	0.0	37.4	0.0	35.5	37.3	21.6	21.6	44.3	16.5	16.6
LnGrp LOS	C			D		D	D	C	C	D	B	B
Approach Vol, veh/h		52			292			1401			1829	
Approach Delay, s/veh		33.6			36.5			21.7			20.6	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	58.6		20.6	20.5	52.1		20.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	61.0		31.0	31.0	46.0		31.0				
Max Q Clear Time (g_c+I1), s	2.3	32.0		13.2	15.9	31.0		13.5				
Green Ext Time (p_c), s	0.0	22.5		1.6	0.7	13.5		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				22.5								
HCM 2010 LOS				C								

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	8	74	61	1457	1677	3
Future Vol, veh/h	8	74	61	1457	1677	3
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	0
Mvmt Flow	9	80	66	1567	1803	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2725	908	1811	0	-	0
Stage 1	1810	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	16	276	331	-	-	-
Stage 1	114	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	13	275	331	-	-	-
Mov Cap-2 Maneuver	78	-	-	-	-	-
Stage 1	113	-	-	-	-	-
Stage 2	277	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.7	0.7	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	331	-	221	-	-
HCM Lane V/C Ratio	0.198	-	0.399	-	-
HCM Control Delay (s)	18.5	-	31.7	-	-
HCM Lane LOS	C	-	D	-	-
HCM 95th %tile Q(veh)	0.7	-	1.8	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	10	0	2	1450	1654	12
Future Vol, veh/h	10	0	2	1450	1654	12
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	10	0	2	1510	1723	13
























Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2489	869	1736	0	-	0
Stage 1	1730	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	24	293	354	-	-	-
Stage 1	127	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	24	293	354	-	-	-
Mov Cap-2 Maneuver	24	-	-	-	-	-
Stage 1	127	-	-	-	-	-
Stage 2	417	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	241	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	354	-	24	-	-
HCM Lane V/C Ratio	0.006	-	0.434	-	-
HCM Control Delay (s)	15.2	-	241	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0	-	1.3	-	-

HCM 2010 Signalized Intersection Summary
5: Redwood Rd & Grove Way

1744 Ruby St
Existing with Project - AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	154	12	585	122	183	24	897	533	166	1068	63
Future Volume (veh/h)	87	154	12	585	122	183	24	897	533	166	1068	63
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.96	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1845	1845	1824	1845	1845	1845	1845	1845	1845	1845	1845	1824
Adj Flow Rate, veh/h	91	160	9	700	0	0	25	934	555	173	1112	64
Adj No. of Lanes	1	1	0	2	0	1	1	3	1	2	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	217	214	12	796	0	355	27	1123	685	1024	1721	99
Arrive On Green	0.12	0.12	0.12	0.23	0.00	0.00	0.02	0.22	0.22	0.30	0.51	0.51
Sat Flow, veh/h	1757	1727	97	3514	0	1568	1757	5036	1506	3408	3365	194
Grp Volume(v), veh/h	91	0	169	700	0	0	25	934	555	173	579	597
Grp Sat Flow(s),veh/h/ln	1757	0	1825	1757	0	1568	1757	1679	1506	1704	1752	1806
Q Serve(g_s), s	6.2	0.0	11.6	25.0	0.0	0.0	1.8	23.0	29.0	4.9	31.3	31.4
Cycle Q Clear(g_c), s	6.2	0.0	11.6	25.0	0.0	0.0	1.8	23.0	29.0	4.9	31.3	31.4
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	217	0	226	796	0	355	27	1123	685	1024	896	924
V/C Ratio(X)	0.42	0.00	0.75	0.88	0.00	0.00	0.93	0.83	0.81	0.17	0.65	0.65
Avail Cap(c_a), veh/h	487	0	505	1054	0	470	108	1123	685	1024	896	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	0.0	55.0	48.6	0.0	0.0	63.9	48.2	28.0	33.5	23.2	23.2
Incr Delay (d2), s/veh	0.5	0.0	1.9	5.7	0.0	0.0	34.1	7.2	10.0	0.0	3.6	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	6.0	12.8	0.0	0.0	1.2	11.4	21.8	2.3	16.0	16.5
LnGrp Delay(d),s/veh	53.1	0.0	56.9	54.3	0.0	0.0	98.1	55.4	38.0	33.5	26.8	26.7
LnGrp LOS	D		E	D			F	E	D	C	C	C
Approach Vol, veh/h		260			700			1514			1349	
Approach Delay, s/veh		55.6			54.3			49.7			27.6	
Approach LOS		E			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	70.5		20.1	43.5	33.0		33.4				
Change Period (Y+Rc), s	3.7	4.1		* 4.2	4.1	* 4.1		4.6				
Max Green Setting (Gmax), s	8.3	30.9		* 36	10.3	* 29		38.4				
Max Q Clear Time (g_c+I1), s	3.8	33.4		13.6	6.9	31.0		27.0				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.2	0.0		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			43.1									
HCM 2010 LOS			D									
Notes												

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	21	4	15	33	2
Future Vol, veh/h	15	21	4	15	33	2
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	15	21	4	15	33	2






















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	38	0	52
Stage 1	-	-	-	-	28
Stage 2	-	-	-	-	24
Critical Hdwy	-	-	4.13	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.227	-	3.527
Pot Cap-1 Maneuver	-	-	1566	-	954
Stage 1	-	-	-	-	992
Stage 2	-	-	-	-	996
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1566	-	948
Mov Cap-2 Maneuver	-	-	-	-	948
Stage 1	-	-	-	-	990
Stage 2	-	-	-	-	992

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	953	-	-	1566	-
HCM Lane V/C Ratio	0.037	-	-	0.003	-
HCM Control Delay (s)	8.9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 Signalized Intersection Summary
2: A St & Rockaway Ln/4th St

1744 Ruby St
Existing with Project - PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	27	7	78	15	248	6	1393	68	241	1382	15
Future Volume (veh/h)	36	27	7	78	15	248	6	1393	68	241	1382	15
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	37	28	4	80	15	26	6	1436	68	248	1425	15
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	126	81	9	233	37	215	204	1889	89	294	2152	23
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.12	0.56	0.56	0.17	0.61	0.61
Sat Flow, veh/h	442	582	63	1123	269	1551	1757	3403	161	1757	3552	37
Grp Volume(v), veh/h	69	0	0	95	0	26	6	738	766	248	703	737
Grp Sat Flow(s),veh/h/ln	1087	0	0	1392	0	1551	1757	1752	1811	1757	1752	1837
Q Serve(g_s), s	1.6	0.0	0.0	0.0	0.0	1.3	0.3	27.8	28.1	11.8	22.7	22.7
Cycle Q Clear(g_c), s	7.1	0.0	0.0	5.4	0.0	1.3	0.3	27.8	28.1	11.8	22.7	22.7
Prop In Lane	0.54		0.06	0.84		1.00	1.00		0.09	1.00		0.02
Lane Grp Cap(c), veh/h	215	0	0	270	0	215	204	973	1005	294	1062	1113
V/C Ratio(X)	0.32	0.00	0.00	0.35	0.00	0.12	0.03	0.76	0.76	0.84	0.66	0.66
Avail Cap(c_a), veh/h	552	0	0	582	0	559	327	973	1005	633	1243	1303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	0.0	0.0	34.2	0.0	32.5	33.7	14.7	14.8	34.7	11.2	11.2
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.8	0.0	0.2	0.1	3.5	3.5	6.6	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	2.1	0.0	0.6	0.1	14.3	14.8	6.3	11.2	11.8
LnGrp Delay(d),s/veh	35.6	0.0	0.0	35.0	0.0	32.7	33.8	18.2	18.3	41.3	12.2	12.2
LnGrp LOS	D			C		C	C	B	B	D	B	B
Approach Vol, veh/h		69			121			1510			1688	
Approach Delay, s/veh		35.6			34.5			18.3			16.5	
Approach LOS		D			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	56.1		15.9	18.4	51.7		15.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	61.0		31.0	31.0	46.0		31.0				
Max Q Clear Time (g_c+I1), s	2.3	24.7		7.4	13.8	30.1		9.1				
Green Ext Time (p_c), s	0.0	27.4		1.0	0.6	14.3		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				18.3								
HCM 2010 LOS				B								

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	6	57	74	1604	1586	10
Future Vol, veh/h	6	57	74	1604	1586	10
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	58	76	1637	1618	10

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2597	819	1634	0	-	0
Stage 1	1628	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	20	316	388	-	-	-
Stage 1	144	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	16	314	388	-	-	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	143	-	-	-	-	-
Stage 2	261	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.8	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	388	-	255	-	-
HCM Lane V/C Ratio	0.195	-	0.252	-	-
HCM Control Delay (s)	16.5	-	23.8	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.7	-	1	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	5	3	3	1618	1587	16
Future Vol, veh/h	5	3	3	1618	1587	16
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	3	3	1685	1653	17
























Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2511	836	1671	0	-	0
Stage 1	1662	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	23	308	376	-	-	-
Stage 1	138	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	308	376	-	-	-
Mov Cap-2 Maneuver	23	-	-	-	-	-
Stage 1	138	-	-	-	-	-
Stage 2	374	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	137.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	376	-	35	-	-
HCM Lane V/C Ratio	0.008	-	0.238	-	-
HCM Control Delay (s)	14.7	-	137.4	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

HCM 2010 Signalized Intersection Summary
5: Redwood Rd & Grove Way

1744 Ruby St
Existing with Project - PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	128	8	423	121	186	23	923	687	227	1144	141
Future Volume (veh/h)	117	128	8	423	121	186	23	923	687	227	1144	141
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.96	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1845	1845	1824	1845	1845	1845	1845	1845	1845	1845	1845	1824
Adj Flow Rate, veh/h	124	136	7	290	354	0	24	982	731	241	1217	146
Adj No. of Lanes	1	1	0	1	1	1	1	3	1	2	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	191	189	10	384	403	343	26	1043	649	1188	1711	204
Arrive On Green	0.11	0.11	0.11	0.22	0.22	0.00	0.01	0.21	0.21	0.35	0.54	0.54
Sat Flow, veh/h	1757	1737	89	1757	1845	1568	1757	5036	1504	3408	3147	376
Grp Volume(v), veh/h	124	0	143	290	354	0	24	982	731	241	676	687
Grp Sat Flow(s),veh/h/ln	1757	0	1826	1757	1845	1568	1757	1679	1504	1704	1752	1771
Q Serve(g_s), s	9.5	0.0	10.6	21.6	26.0	0.0	1.9	26.9	29.0	6.9	40.1	40.5
Cycle Q Clear(g_c), s	9.5	0.0	10.6	21.6	26.0	0.0	1.9	26.9	29.0	6.9	40.1	40.5
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	191	0	198	384	403	343	26	1043	649	1188	953	963
V/C Ratio(X)	0.65	0.00	0.72	0.75	0.88	0.00	0.92	0.94	1.13	0.20	0.71	0.71
Avail Cap(c_a), veh/h	452	0	470	514	540	459	100	1043	649	1188	953	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	0.0	60.4	51.2	52.9	0.0	68.9	54.7	31.7	32.0	23.7	23.8
Incr Delay (d2), s/veh	1.4	0.0	1.9	2.8	9.9	0.0	33.5	16.9	75.6	0.0	4.5	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	5.5	10.8	14.4	0.0	1.2	14.1	38.7	3.3	20.5	20.9
LnGrp Delay(d),s/veh	61.2	0.0	62.2	54.0	62.8	0.0	102.4	71.6	107.3	32.0	28.2	28.3
LnGrp LOS	E		E	D	E		F	E	F	C	C	C
Approach Vol, veh/h		267			644			1737			1604	
Approach Delay, s/veh		61.8			58.8			87.0			28.8	
Approach LOS		E			E			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	80.1		19.2	53.2	33.0		34.6				
Change Period (Y+Rc), s	3.7	4.1		* 4.2	4.1	* 4.1		4.6				
Max Green Setting (Gmax), s	8.3	38.9		* 36	18.3	* 29		40.4				
Max Q Clear Time (g_c+I1), s	3.9	42.5		12.6	8.9	31.0		28.0				
Green Ext Time (p_c), s	0.0	0.0		0.7	3.3	0.0		1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				59.2								
HCM 2010 LOS				E								
Notes												

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	50	2	20	50	4
Future Vol, veh/h	10	50	2	20	50	4
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	54	2	22	54	4




















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	67	0	67
Stage 1	-	-	-	-	40
Stage 2	-	-	-	-	27
Critical Hdwy	-	-	4.13	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.227	-	3.527
Pot Cap-1 Maneuver	-	-	1528	-	936
Stage 1	-	-	-	-	980
Stage 2	-	-	-	-	993
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1528	-	932
Mov Cap-2 Maneuver	-	-	-	-	932
Stage 1	-	-	-	-	978
Stage 2	-	-	-	-	991

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	938	-	-	1528	-
HCM Lane V/C Ratio	0.063	-	-	0.001	-
HCM Control Delay (s)	9.1	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 2010 Signalized Intersection Summary
2: A St & Rockaway Ln/4th St

1744 Ruby St
Cumulative without Project - AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	40	4	120	90	270	10	1600	80	320	1800	70
Future Volume (veh/h)	30	40	4	120	90	270	10	1600	80	320	1800	70
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.96
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	31	42	2	125	94	57	10	1667	81	333	1875	72
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	75	84	3	199	122	375	161	1496	72	368	1919	73
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.09	0.44	0.44	0.21	0.56	0.56
Sat Flow, veh/h	117	351	13	613	507	1558	1757	3398	164	1757	3437	131
Grp Volume(v), veh/h	75	0	0	219	0	57	10	855	893	333	949	998
Grp Sat Flow(s),veh/h/ln	481	0	0	1120	0	1558	1757	1752	1810	1757	1752	1816
Q Serve(g_s), s	1.8	0.0	0.0	0.0	0.0	3.2	0.6	48.1	48.1	20.2	57.0	59.0
Cycle Q Clear(g_c), s	23.2	0.0	0.0	21.4	0.0	3.2	0.6	48.1	48.1	20.2	57.0	59.0
Prop In Lane	0.41		0.03	0.57		1.00	1.00		0.09	1.00		0.07
Lane Grp Cap(c), veh/h	162	0	0	321	0	375	161	771	797	368	978	1014
V/C Ratio(X)	0.46	0.00	0.00	0.68	0.00	0.15	0.06	1.11	1.12	0.91	0.97	0.99
Avail Cap(c_a), veh/h	228	0	0	387	0	442	257	771	797	498	978	1014
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	0.0	0.0	39.4	0.0	32.7	45.4	30.6	30.6	42.1	23.3	23.7
Incr Delay (d2), s/veh	2.0	0.0	0.0	3.7	0.0	0.2	0.2	66.1	70.8	16.2	21.7	24.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	6.7	0.0	1.4	0.3	37.3	39.6	11.5	33.3	36.3
LnGrp Delay(d),s/veh	39.5	0.0	0.0	43.2	0.0	32.9	45.5	96.7	101.4	58.4	44.9	48.3
LnGrp LOS	D			D		C	D	F	F	E	D	D
Approach Vol, veh/h		75			276			1758			2280	
Approach Delay, s/veh		39.5			41.0			98.8			48.4	
Approach LOS		D			D			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	65.0		30.3	26.9	52.1		30.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	61.0		31.0	31.0	46.0		31.0				
Max Q Clear Time (g_c+I1), s	2.6	61.0		23.4	22.2	50.1		25.2				
Green Ext Time (p_c), s	0.0	0.0		1.2	0.7	0.0		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			67.9									
HCM 2010 LOS			E									

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	0	90	80	1820	2090	1
Future Vol, veh/h	0	90	80	1820	2090	1
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	97	86	1957	2247	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3404	1129	2253	0	-	0
Stage 1	2253	-	-	-	-	-
Stage 2	1151	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	5	196	222	-	-	-
Stage 1	65	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	3	195	222	-	-	-
Mov Cap-2 Maneuver	43	-	-	-	-	-
Stage 1	65	-	-	-	-	-
Stage 2	159	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.4	1.3	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	222	-	195	-	-
HCM Lane V/C Ratio	0.387	-	0.496	-	-
HCM Control Delay (s)	31.1	-	40.4	-	-
HCM Lane LOS	D	-	E	-	-
HCM 95th %tile Q(veh)	1.7	-	2.5	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	4	0	2	1800	2060	20
Future Vol, veh/h	4	0	2	1800	2060	20
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	4	0	2	1875	2146	21

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3099	1084	2168	0	-	0
Stage 1	2157	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	9	211	240	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	9	211	240	-	-	-
Mov Cap-2 Maneuver	9	-	-	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	334	-	-	-	-	-
























Approach	EB	NB	SB
HCM Control Delay, s	597.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	240	-	9	-	-
HCM Lane V/C Ratio	0.009	-	0.463	-	-
HCM Control Delay (s)	20.1	-	597.1	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
5: Redwood Rd & Grove Way

1744 Ruby St
Cumulative without Project - AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	200	20	730	160	230	30	1110	670	210	1330	80
Future Volume (veh/h)	110	200	20	730	160	230	30	1110	670	210	1330	80
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.96	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1845	1845	1824	1845	1845	1845	1845	1845	1845	1845	1845	1824
Adj Flow Rate, veh/h	115	208	18	879	0	0	31	1156	698	219	1385	81
Adj No. of Lanes	1	1	0	2	0	1	1	3	1	2	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	271	257	22	957	0	427	35	1123	757	765	1448	84
Arrive On Green	0.15	0.15	0.15	0.27	0.00	0.00	0.02	0.22	0.22	0.22	0.43	0.43
Sat Flow, veh/h	1757	1671	145	3514	0	1568	1757	5036	1506	3408	3362	196
Grp Volume(v), veh/h	115	0	226	879	0	0	31	1156	698	219	720	746
Grp Sat Flow(s),veh/h/ln	1757	0	1815	1757	0	1568	1757	1679	1506	1704	1752	1806
Q Serve(g_s), s	7.7	0.0	15.6	31.6	0.0	0.0	2.3	29.0	29.0	6.9	51.6	52.1
Cycle Q Clear(g_c), s	7.7	0.0	15.6	31.6	0.0	0.0	2.3	29.0	29.0	6.9	51.6	52.1
Prop In Lane	1.00		0.08	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	271	0	280	957	0	427	35	1123	757	765	755	778
V/C Ratio(X)	0.42	0.00	0.81	0.92	0.00	0.00	0.88	1.03	0.92	0.29	0.95	0.96
Avail Cap(c_a), veh/h	487	0	503	1054	0	470	108	1123	757	765	755	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	0.0	53.1	45.9	0.0	0.0	63.6	50.5	24.2	41.8	35.8	35.9
Incr Delay (d2), s/veh	0.4	0.0	2.1	11.3	0.0	0.0	22.2	34.5	18.5	0.1	23.3	23.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	8.0	16.8	0.0	0.0	1.3	17.0	28.9	3.3	29.9	31.0
LnGrp Delay(d),s/veh	50.2	0.0	55.3	57.2	0.0	0.0	85.8	85.0	42.6	41.9	59.1	59.7
LnGrp LOS	D		E	E			F	F	D	D	E	E
Approach Vol, veh/h		341			879			1885			1685	
Approach Delay, s/veh		53.5			57.2			69.4			57.1	
Approach LOS		D			E			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	60.0		24.0	33.6	33.0		39.4				
Change Period (Y+Rc), s	3.7	4.1		* 4.2	4.1	* 4.1		4.6				
Max Green Setting (Gmax), s	8.3	30.9		* 36	10.3	* 29		38.4				
Max Q Clear Time (g_c+I1), s	4.3	54.1		17.6	8.9	31.0		33.6				
Green Ext Time (p_c), s	0.0	0.0		1.0	0.1	0.0		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				61.7								
HCM 2010 LOS				E								
Notes												

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	30	4	10	40	2
Future Vol, veh/h	20	30	4	10	40	2
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	20	30	4	10	40	2




















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	51	0	54 35
Stage 1	-	-	-	-	35 -
Stage 2	-	-	-	-	19 -
Critical Hdwy	-	-	4.13	-	6.43 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	2.227	-	3.527 3.327
Pot Cap-1 Maneuver	-	-	1549	-	952 1035
Stage 1	-	-	-	-	985 -
Stage 2	-	-	-	-	1001 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1549	-	948 1035
Mov Cap-2 Maneuver	-	-	-	-	948 -
Stage 1	-	-	-	-	985 -
Stage 2	-	-	-	-	997 -

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	952	-	-	1549	-
HCM Lane V/C Ratio	0.045	-	-	0.003	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 Signalized Intersection Summary
 2: A St & Rockaway Ln/4th St

1744 Ruby St
 Cumulative without Project - PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	40	10	100	20	310	10	1730	90	300	1720	20
Future Volume (veh/h)	50	40	10	100	20	310	10	1730	90	300	1720	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.97	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	52	41	7	103	21	41	10	1784	91	309	1773	21
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	129	89	12	252	45	298	177	1654	84	349	2076	25
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.10	0.49	0.49	0.20	0.59	0.59
Sat Flow, veh/h	381	464	64	963	236	1548	1757	3390	171	1757	3547	42
Grp Volume(v), veh/h	100	0	0	124	0	41	10	915	960	309	875	919
Grp Sat Flow(s),veh/h/ln	909	0	0	1199	0	1548	1757	1752	1809	1757	1752	1836
Q Serve(g_s), s	4.0	0.0	0.0	0.0	0.0	2.2	0.5	48.3	48.3	16.9	40.9	41.2
Cycle Q Clear(g_c), s	13.8	0.0	0.0	9.8	0.0	2.2	0.5	48.3	48.3	16.9	40.9	41.2
Prop In Lane	0.52		0.07	0.83		1.00	1.00		0.09	1.00		0.02
Lane Grp Cap(c), veh/h	230	0	0	297	0	298	177	855	883	349	1026	1075
V/C Ratio(X)	0.43	0.00	0.00	0.42	0.00	0.14	0.06	1.07	1.09	0.89	0.85	0.86
Avail Cap(c_a), veh/h	413	0	0	466	0	485	284	855	883	550	1080	1132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	0.0	0.0	36.1	0.0	33.2	40.2	25.3	25.3	38.6	17.0	17.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.9	0.0	0.2	0.1	51.3	57.1	10.4	6.5	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	3.1	0.0	1.0	0.3	35.4	38.0	9.2	21.5	22.6
LnGrp Delay(d),s/veh	40.1	0.0	0.0	37.1	0.0	33.4	40.4	76.6	82.4	49.0	23.5	23.4
LnGrp LOS	D			D		C	D	F	F	D	C	C
Approach Vol, veh/h		100			165			1885			2103	
Approach Delay, s/veh		40.1			36.1			79.4			27.2	
Approach LOS		D			D			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	61.9		23.0	23.7	52.3		23.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	61.0		31.0	31.0	46.0		31.0				
Max Q Clear Time (g_c+I1), s	2.5	43.2		11.8	18.9	50.3		15.8				
Green Ext Time (p_c), s	0.0	14.8		1.4	0.7	0.0		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			51.0									
HCM 2010 LOS			D									

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	1	70	90	2000	1980	10
Future Vol, veh/h	1	70	90	2000	1980	10
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	71	92	2041	2020	10

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3231	1016	2032	0	-	0
Stage 1	2027	-	-	-	-	-
Stage 2	1204	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	7	234	271	-	-	-
Stage 1	87	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	5	234	271	-	-	-
Mov Cap-2 Maneuver	54	-	-	-	-	-
Stage 1	87	-	-	-	-	-
Stage 2	162	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.6	1.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	271	-	224	-	-
HCM Lane V/C Ratio	0.339	-	0.323	-	-
HCM Control Delay (s)	24.9	-	28.6	-	-
HCM Lane LOS	C	-	D	-	-
HCM 95th %tile Q(veh)	1.4	-	1.3	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	3	2010	1970	20
Future Vol, veh/h	1	3	3	2010	1970	20
Conflicting Peds, #/hr	0	0	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	3	3	2094	2052	21
























Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3120	1040	2077	0	-	0
Stage 1	2067	-	-	-	-	-
Stage 2	1053	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	9	225	260	-	-	-
Stage 1	82	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	9	224	260	-	-	-
Mov Cap-2 Maneuver	9	-	-	-	-	-
Stage 1	82	-	-	-	-	-
Stage 2	290	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	133.7	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	260	-	32	-	-
HCM Lane V/C Ratio	0.012	-	0.13	-	-
HCM Control Delay (s)	19	-	133.7	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

HCM 2010 Signalized Intersection Summary
5: Redwood Rd & Grove Way

1744 Ruby St
Cumulative without Project - PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	160	10	530	150	240	30	1140	860	290	1420	180
Future Volume (veh/h)	150	160	10	530	150	240	30	1140	860	290	1420	180
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.95	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1845	1845	1824	1845	1845	1845	1845	1845	1845	1845	1845	1824
Adj Flow Rate, veh/h	160	170	9	362	443	0	32	1213	915	309	1511	186
Adj No. of Lanes	1	1	0	1	1	1	1	3	1	2	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	248	244	13	461	484	412	37	1043	715	928	1448	176
Arrive On Green	0.14	0.14	0.14	0.26	0.26	0.00	0.02	0.21	0.21	0.27	0.46	0.46
Sat Flow, veh/h	1757	1733	92	1757	1845	1568	1757	5036	1491	3408	3139	381
Grp Volume(v), veh/h	160	0	179	362	443	0	32	1213	915	309	835	862
Grp Sat Flow(s),veh/h/ln	1757	0	1825	1757	1845	1568	1757	1679	1491	1704	1752	1768
Q Serve(g_s), s	12.1	0.0	13.1	26.8	32.6	0.0	2.5	29.0	29.0	10.2	64.6	64.6
Cycle Q Clear(g_c), s	12.1	0.0	13.1	26.8	32.6	0.0	2.5	29.0	29.0	10.2	64.6	64.6
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	248	0	257	461	484	412	37	1043	715	928	809	816
V/C Ratio(X)	0.65	0.00	0.70	0.79	0.92	0.00	0.87	1.16	1.28	0.33	1.03	1.06
Avail Cap(c_a), veh/h	452	0	469	514	540	459	100	1043	715	928	809	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	0.0	57.3	48.0	50.1	0.0	68.3	55.5	27.7	40.8	37.7	37.7
Incr Delay (d2), s/veh	1.1	0.0	1.3	6.1	18.2	0.0	19.4	84.0	136.6	0.1	40.3	47.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	6.7	13.8	19.1	0.0	1.4	21.5	54.7	4.8	40.3	42.3
LnGrp Delay(d),s/veh	57.9	0.0	58.6	54.1	68.3	0.0	87.8	139.5	164.3	40.8	78.0	85.4
LnGrp LOS	E		E	D	E		F	F	F	D	F	F
Approach Vol, veh/h		339			805			2160			2006	
Approach Delay, s/veh		58.3			61.9			149.3			75.5	
Approach LOS		E			E			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	68.6		23.7	42.5	33.0		40.7				
Change Period (Y+Rc), s	3.7	4.1		* 4.2	4.1	* 4.1		4.6				
Max Green Setting (Gmax), s	8.3	38.9		* 36	18.3	* 29		40.4				
Max Q Clear Time (g_c+I1), s	4.5	66.6		15.1	12.2	31.0		34.6				
Green Ext Time (p_c), s	0.0	0.0		0.9	1.1	0.0		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay	102.3											
HCM 2010 LOS	F											
Notes												

Intersection						
Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	16	50	2	23	52	4
Future Vol, veh/h	16	50	2	23	52	4
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	17	54	2	25	57	4




















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	74	0	77
Stage 1	-	-	-	-	47
Stage 2	-	-	-	-	30
Critical Hdwy	-	-	4.13	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.227	-	3.527
Pot Cap-1 Maneuver	-	-	1519	-	924
Stage 1	-	-	-	-	973
Stage 2	-	-	-	-	990
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1519	-	920
Mov Cap-2 Maneuver	-	-	-	-	920
Stage 1	-	-	-	-	971
Stage 2	-	-	-	-	988

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	926	-	-	1519	-
HCM Lane V/C Ratio	0.066	-	-	0.001	-
HCM Control Delay (s)	9.2	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 2010 Signalized Intersection Summary
2: A St & Rockaway Ln/4th St

1744 Ruby St
Cumulative with Project - AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	40	4	120	90	270	10	1602	80	321	1806	70
Future Volume (veh/h)	30	40	4	120	90	270	10	1602	80	321	1806	70
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.96
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	31	42	2	125	94	57	10	1669	81	334	1881	72
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	75	84	3	199	122	375	161	1494	72	369	1919	73
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.09	0.44	0.44	0.21	0.56	0.56
Sat Flow, veh/h	117	351	13	613	507	1558	1757	3398	164	1757	3438	131
Grp Volume(v), veh/h	75	0	0	219	0	57	10	856	894	334	951	1002
Grp Sat Flow(s),veh/h/ln	481	0	0	1120	0	1558	1757	1752	1810	1757	1752	1816
Q Serve(g_s), s	1.8	0.0	0.0	0.0	0.0	3.2	0.6	48.1	48.1	20.3	57.4	59.4
Cycle Q Clear(g_c), s	23.2	0.0	0.0	21.4	0.0	3.2	0.6	48.1	48.1	20.3	57.4	59.4
Prop In Lane	0.41		0.03	0.57		1.00	1.00		0.09	1.00		0.07
Lane Grp Cap(c), veh/h	162	0	0	321	0	375	161	770	796	369	978	1014
V/C Ratio(X)	0.46	0.00	0.00	0.68	0.00	0.15	0.06	1.11	1.12	0.91	0.97	0.99
Avail Cap(c_a), veh/h	228	0	0	387	0	442	257	770	796	498	978	1014
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	0.0	0.0	39.4	0.0	32.7	45.4	30.6	30.6	42.1	23.3	23.8
Incr Delay (d2), s/veh	2.0	0.0	0.0	3.8	0.0	0.2	0.2	67.1	71.8	16.3	22.3	25.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	6.7	0.0	1.4	0.3	37.5	39.7	11.5	33.5	36.6
LnGrp Delay(d),s/veh	39.5	0.0	0.0	43.2	0.0	32.9	45.5	97.7	102.4	58.4	45.6	49.1
LnGrp LOS	D			D		C	D	F	F	E	D	D
Approach Vol, veh/h		75			276			1760			2287	
Approach Delay, s/veh		39.5			41.0			99.8			49.0	
Approach LOS		D			D			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	65.0		30.3	26.9	52.1		30.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	61.0		31.0	31.0	46.0		31.0				
Max Q Clear Time (g_c+I1), s	2.6	61.4		23.4	22.3	50.1		25.2				
Green Ext Time (p_c), s	0.0	0.0		1.2	0.7	0.0		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay	68.7											
HCM 2010 LOS	E											

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	8	97	82	1820	2090	3
Future Vol, veh/h	8	97	82	1820	2090	3
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	104	88	1957	2247	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3409	1130	2256	0	-	0
Stage 1	2254	-	-	-	-	-
Stage 2	1155	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	~ 5	196	221	-	-	-
Stage 1	65	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 3	195	221	-	-	-
Mov Cap-2 Maneuver	43	-	-	-	-	-
Stage 1	65	-	-	-	-	-
Stage 2	156	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	74.7	1.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	221	-	154	-	-
HCM Lane V/C Ratio	0.399	-	0.733	-	-
HCM Control Delay (s)	31.7	-	74.7	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	1.8	-	4.4	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘↗		↘	↑↑	↑↑	
Traffic Vol, veh/h	10	0	2	1808	2062	22
Future Vol, veh/h	10	0	2	1808	2062	22
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	10	0	2	1883	2148	23

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3106	1086	2172	0	-	0
Stage 1	2160	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	~ 9	210	239	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 9	210	239	-	-	-
Mov Cap-2 Maneuver	~ 9	-	-	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	333	-	-	-	-	-
























Approach	EB	NB	SB
HCM Control Delay, s	\$ 898.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	239	-	9	-	-
HCM Lane V/C Ratio	0.009	-	1.157	-	-
HCM Control Delay (s)	20.2	-	\$ 898.2	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0	-	2.1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
5: Redwood Rd & Grove Way

1744 Ruby St
Cumulative with Project - AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	200	20	731	160	230	30	1122	671	210	1334	80
Future Volume (veh/h)	110	200	20	731	160	230	30	1122	671	210	1334	80
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.96	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1845	1845	1824	1845	1845	1845	1845	1845	1845	1845	1845	1824
Adj Flow Rate, veh/h	115	208	18	880	0	0	31	1169	699	219	1390	81
Adj No. of Lanes	1	1	0	2	0	1	1	3	1	2	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	271	257	22	957	0	427	35	1123	757	764	1447	84
Arrive On Green	0.15	0.15	0.15	0.27	0.00	0.00	0.02	0.22	0.22	0.22	0.43	0.43
Sat Flow, veh/h	1757	1671	145	3514	0	1568	1757	5036	1506	3408	3363	195
Grp Volume(v), veh/h	115	0	226	880	0	0	31	1169	699	219	722	749
Grp Sat Flow(s),veh/h/ln	1757	0	1815	1757	0	1568	1757	1679	1506	1704	1752	1806
Q Serve(g_s), s	7.7	0.0	15.6	31.6	0.0	0.0	2.3	29.0	29.0	6.9	51.9	52.4
Cycle Q Clear(g_c), s	7.7	0.0	15.6	31.6	0.0	0.0	2.3	29.0	29.0	6.9	51.9	52.4
Prop In Lane	1.00		0.08	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	271	0	280	957	0	427	35	1123	757	764	754	777
V/C Ratio(X)	0.42	0.00	0.81	0.92	0.00	0.00	0.88	1.04	0.92	0.29	0.96	0.96
Avail Cap(c_a), veh/h	487	0	503	1054	0	470	108	1123	757	764	754	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	0.0	53.1	45.9	0.0	0.0	63.6	50.5	24.2	41.8	35.9	36.0
Incr Delay (d2), s/veh	0.4	0.0	2.1	11.3	0.0	0.0	22.2	38.0	18.6	0.1	24.0	24.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	8.0	16.8	0.0	0.0	1.3	17.4	29.0	3.3	30.1	31.3
LnGrp Delay(d),s/veh	50.2	0.0	55.3	57.2	0.0	0.0	85.8	88.5	42.7	41.9	59.8	60.5
LnGrp LOS	D		E	E			F	F	D	D	E	E
Approach Vol, veh/h		341			880			1899			1690	
Approach Delay, s/veh		53.5			57.2			71.6			57.8	
Approach LOS		D			E			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	60.0		24.0	33.5	33.0		39.4				
Change Period (Y+Rc), s	3.7	4.1		* 4.2	4.1	* 4.1		4.6				
Max Green Setting (Gmax), s	8.3	30.9		* 36	10.3	* 29		38.4				
Max Q Clear Time (g_c+I1), s	4.3	54.4		17.6	8.9	31.0		33.6				
Green Ext Time (p_c), s	0.0	0.0		1.0	0.1	0.0		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay			62.8									
HCM 2010 LOS			E									
Notes												

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	24	30	4	19	48	2
Future Vol, veh/h	24	30	4	19	48	2
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	30	4	19	48	2




















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	55	0	67 39
Stage 1	-	-	-	-	39 -
Stage 2	-	-	-	-	28 -
Critical Hdwy	-	-	4.13	-	6.43 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	2.227	-	3.527 3.327
Pot Cap-1 Maneuver	-	-	1544	-	936 1030
Stage 1	-	-	-	-	981 -
Stage 2	-	-	-	-	992 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1544	-	932 1030
Mov Cap-2 Maneuver	-	-	-	-	932 -
Stage 1	-	-	-	-	981 -
Stage 2	-	-	-	-	988 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	936	-	-	1544	-
HCM Lane V/C Ratio	0.054	-	-	0.003	-
HCM Control Delay (s)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 2010 Signalized Intersection Summary
2: A St & Rockaway Ln/4th St

1744 Ruby St
Cumulative with Project - PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	40	10	100	20	311	10	1737	90	301	1724	20
Future Volume (veh/h)	50	40	10	100	20	311	10	1737	90	301	1724	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.97	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	52	41	7	103	21	41	10	1791	91	310	1777	20
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	128	89	12	252	45	298	177	1653	83	350	2078	23
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.10	0.49	0.49	0.20	0.59	0.59
Sat Flow, veh/h	381	464	64	963	236	1548	1757	3391	171	1757	3549	40
Grp Volume(v), veh/h	100	0	0	124	0	41	10	918	964	310	876	921
Grp Sat Flow(s),veh/h/ln	908	0	0	1198	0	1548	1757	1752	1809	1757	1752	1836
Q Serve(g_s), s	4.0	0.0	0.0	0.0	0.0	2.2	0.5	48.3	48.3	17.0	41.0	41.3
Cycle Q Clear(g_c), s	13.8	0.0	0.0	9.8	0.0	2.2	0.5	48.3	48.3	17.0	41.0	41.3
Prop In Lane	0.52		0.07	0.83		1.00	1.00		0.09	1.00		0.02
Lane Grp Cap(c), veh/h	230	0	0	297	0	298	177	854	882	350	1026	1075
V/C Ratio(X)	0.43	0.00	0.00	0.42	0.00	0.14	0.06	1.07	1.09	0.89	0.85	0.86
Avail Cap(c_a), veh/h	413	0	0	465	0	485	284	854	882	550	1079	1131
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	0.0	0.0	36.2	0.0	33.2	40.2	25.4	25.4	38.6	17.0	17.1
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.9	0.0	0.2	0.1	53.0	59.0	10.5	6.6	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	3.1	0.0	1.0	0.3	35.8	38.4	9.3	21.6	22.6
LnGrp Delay(d),s/veh	40.1	0.0	0.0	37.1	0.0	33.4	40.4	78.3	84.4	49.1	23.6	23.5
LnGrp LOS	D			D		C	D	F	F	D	C	C
Approach Vol, veh/h		100			165			1892			2107	
Approach Delay, s/veh		40.1			36.2			81.2			27.3	
Approach LOS		D			D			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	62.0		23.0	23.7	52.3		23.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	61.0		31.0	31.0	46.0		31.0				
Max Q Clear Time (g_c+I1), s	2.5	43.3		11.8	19.0	50.3		15.8				
Green Ext Time (p_c), s	0.0	14.7		1.4	0.7	0.0		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay				51.9								
HCM 2010 LOS				D								

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	6	75	98	2000	1980	15
Future Vol, veh/h	6	75	98	2000	1980	15
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	77	100	2041	2020	15

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3249	1019	2037	0	-	0
Stage 1	2029	-	-	-	-	-
Stage 2	1220	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	7	233	270	-	-	-
Stage 1	86	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 4	233	270	-	-	-
Mov Cap-2 Maneuver	52	-	-	-	-	-
Stage 1	86	-	-	-	-	-
Stage 2	151	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	39.3	1.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	270	-	185	-	-
HCM Lane V/C Ratio	0.37	-	0.447	-	-
HCM Control Delay (s)	26	-	39.3	-	-
HCM Lane LOS	D	-	E	-	-
HCM 95th %tile Q(veh)	1.6	-	2.1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	XF		X	↑↑	↑↑	
Traffic Vol, veh/h	5	3	3	2015	1975	27
Future Vol, veh/h	5	3	3	2015	1975	27
Conflicting Peds, #/hr	0	0	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	3	3	2099	2057	28

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3131	1047	2089	0	-	0
Stage 1	2075	-	-	-	-	-
Stage 2	1056	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	8	223	257	-	-	-
Stage 1	81	-	-	-	-	-
Stage 2	294	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	8	222	257	-	-	-
Mov Cap-2 Maneuver	8	-	-	-	-	-
Stage 1	81	-	-	-	-	-
Stage 2	289	-	-	-	-	-
























Approach	EB	NB	SB
HCM Control Delay, s	495.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	257	-	13	-	-
HCM Lane V/C Ratio	0.012	-	0.641	-	-
HCM Control Delay (s)	19.2	-	495.1	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0	-	1.5	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
5: Redwood Rd & Grove Way

1744 Ruby St
Cumulative with Project - PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	160	10	531	150	240	30	1148	861	290	1430	180
Future Volume (veh/h)	150	160	10	531	150	240	30	1148	861	290	1430	180
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.95	1.00		0.98
Parking Bus, Adj	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 Sat Flow, veh/h/ln	1845	1845	1824	1845	1845	1845	1845	1845	1845	1845	1845	1824
Adj Flow Rate, veh/h	160	170	9	362	443	0	32	1221	916	309	1521	186
Adj No. of Lanes	1	1	0	1	1	1	1	3	1	2	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	248	244	13	461	484	412	37	1043	715	928	1449	175
Arrive On Green	0.14	0.14	0.14	0.26	0.26	0.00	0.02	0.21	0.21	0.27	0.46	0.46
Sat Flow, veh/h	1757	1733	92	1757	1845	1568	1757	5036	1491	3408	3142	379
Grp Volume(v), veh/h	160	0	179	362	443	0	32	1221	916	309	839	868
Grp Sat Flow(s),veh/h/ln	1757	0	1825	1757	1845	1568	1757	1679	1491	1704	1752	1768
Q Serve(g_s), s	12.1	0.0	13.1	26.8	32.6	0.0	2.5	29.0	29.0	10.2	64.6	64.6
Cycle Q Clear(g_c), s	12.1	0.0	13.1	26.8	32.6	0.0	2.5	29.0	29.0	10.2	64.6	64.6
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	248	0	257	461	484	412	37	1043	715	928	809	816
V/C Ratio(X)	0.65	0.00	0.70	0.79	0.92	0.00	0.87	1.17	1.28	0.33	1.04	1.06
Avail Cap(c_a), veh/h	452	0	469	514	540	459	100	1043	715	928	809	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	0.0	57.3	48.0	50.1	0.0	68.3	55.5	27.7	40.8	37.7	37.7
Incr Delay (d2), s/veh	1.1	0.0	1.3	6.1	18.2	0.0	19.4	87.1	137.2	0.1	42.0	49.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	6.7	13.8	19.1	0.0	1.4	21.8	54.8	4.8	40.6	42.8
LnGrp Delay(d),s/veh	57.9	0.0	58.6	54.1	68.3	0.0	87.8	142.6	164.9	40.8	79.7	87.4
LnGrp LOS	E		E	D	E		F	F	F	D	F	F
Approach Vol, veh/h		339			805			2169			2016	
Approach Delay, s/veh		58.3			61.9			151.2			77.1	
Approach LOS		E			E			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	68.6		23.7	42.5	33.0		40.7				
Change Period (Y+Rc), s	3.7	4.1		* 4.2	4.1	* 4.1		4.6				
Max Green Setting (Gmax), s	8.3	38.9		* 36	18.3	* 29		40.4				
Max Q Clear Time (g_c+I1), s	4.5	66.6		15.1	12.2	31.0		34.6				
Green Ext Time (p_c), s	0.0	0.0		0.9	1.1	0.0		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay			103.8									
HCM 2010 LOS			F									
Notes												



SIGNAL WARRANT ANALYSIS



Major Street Crescent Ave
 Minor Street Ruby St

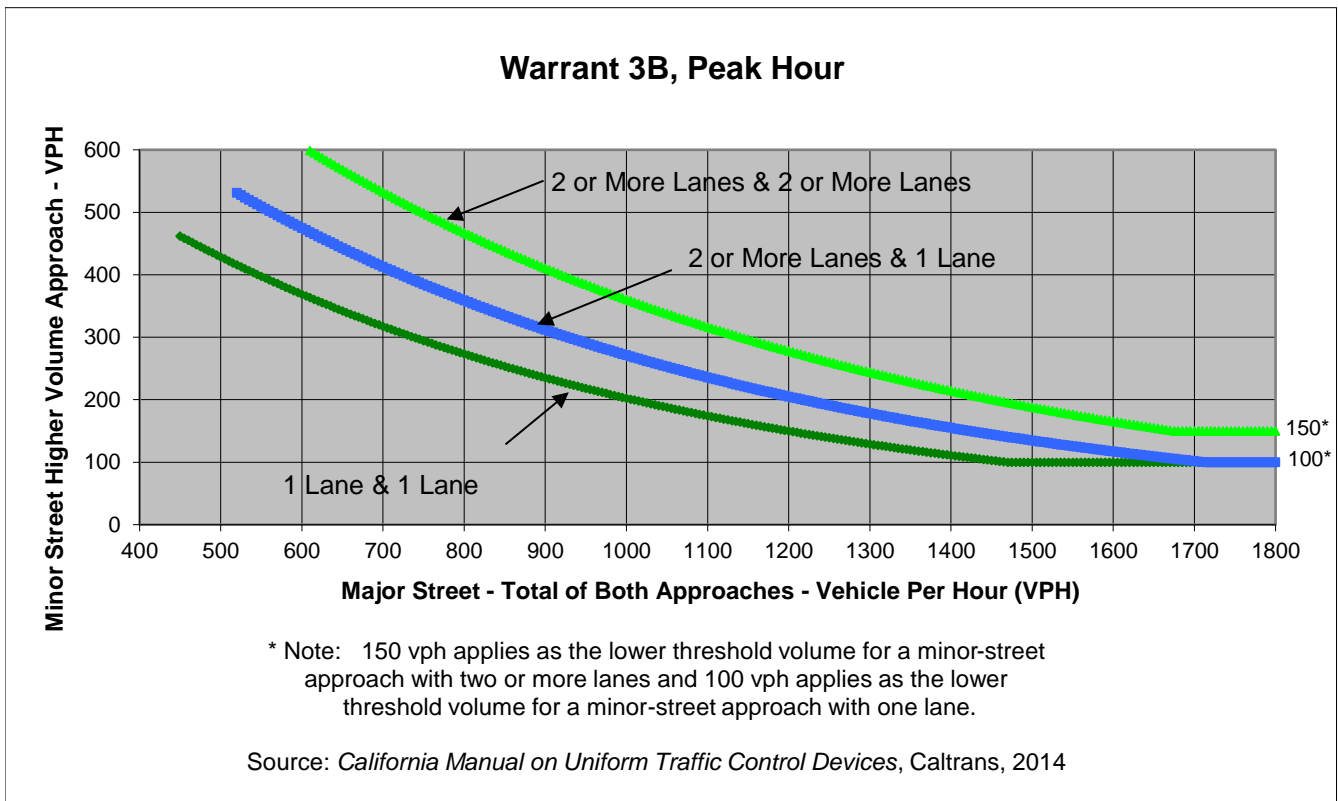
Project 1744 Ruby St TIA
 Scenario Existing without Project
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	38	0	0	2
Through	0	0	6	10
Right	4	0	34	0
Total	42	0	40	12

Major Street Direction

	North/South
X	East/West



	Major Street	Minor Street	Warrant Met
	Crescent Ave	Ruby St	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	52	42	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Ruby St

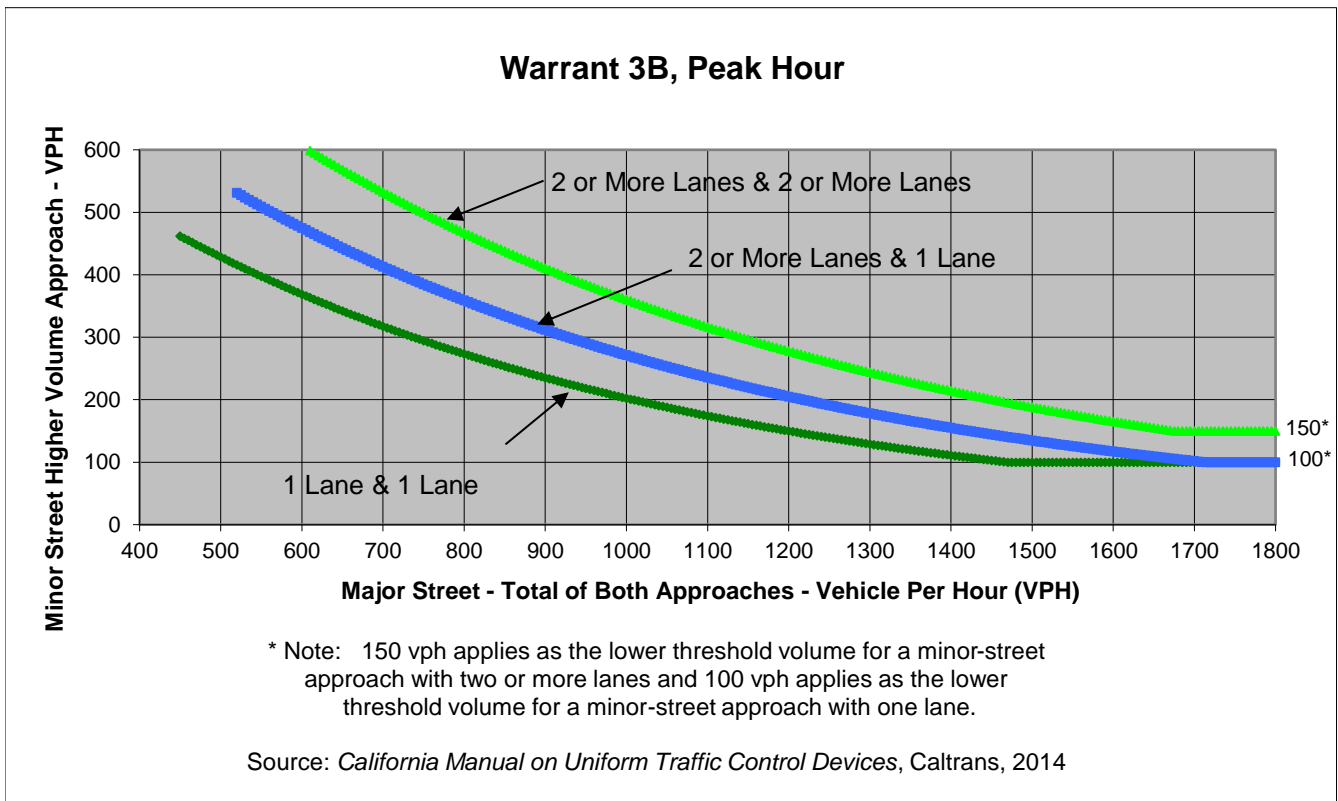
Project 1744 Ruby St TIA
 Scenario Existing without Project
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	59	0	0	0
Through	1,457	1,677	0	0
Right	0	1	67	0
Total	1,516	1,678	67	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Ruby St	
Number of Approach Lanes	2	1	NO
Traffic Volume (VPH) *	3,194	67	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Crescent Ave

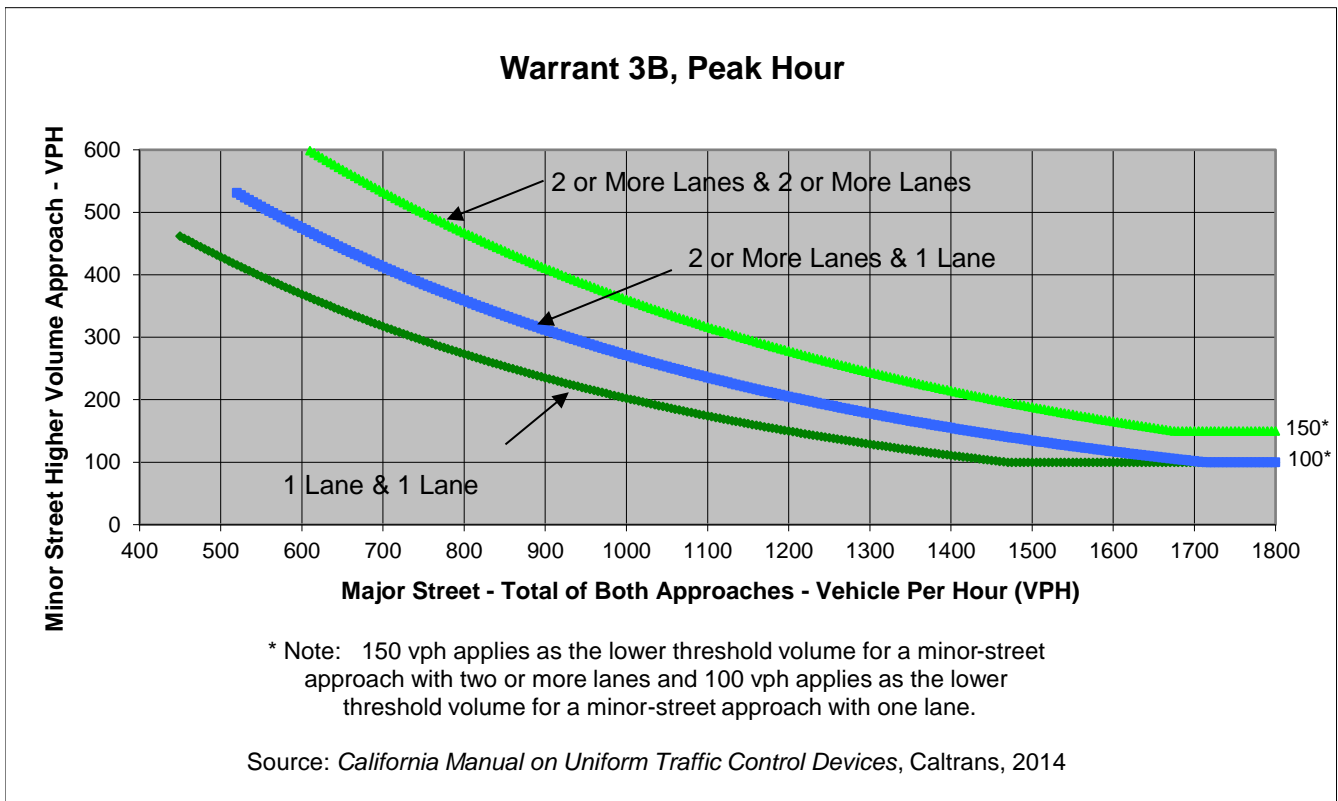
Project 1744 Ruby St TIA
 Scenario Existing without Project
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	4	0
Through	1,442	1,652	0	0
Right	0	10	0	0
Total	1,444	1,662	4	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Crescent Ave	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,106	4	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Crescent Ave
 Minor Street Ruby St

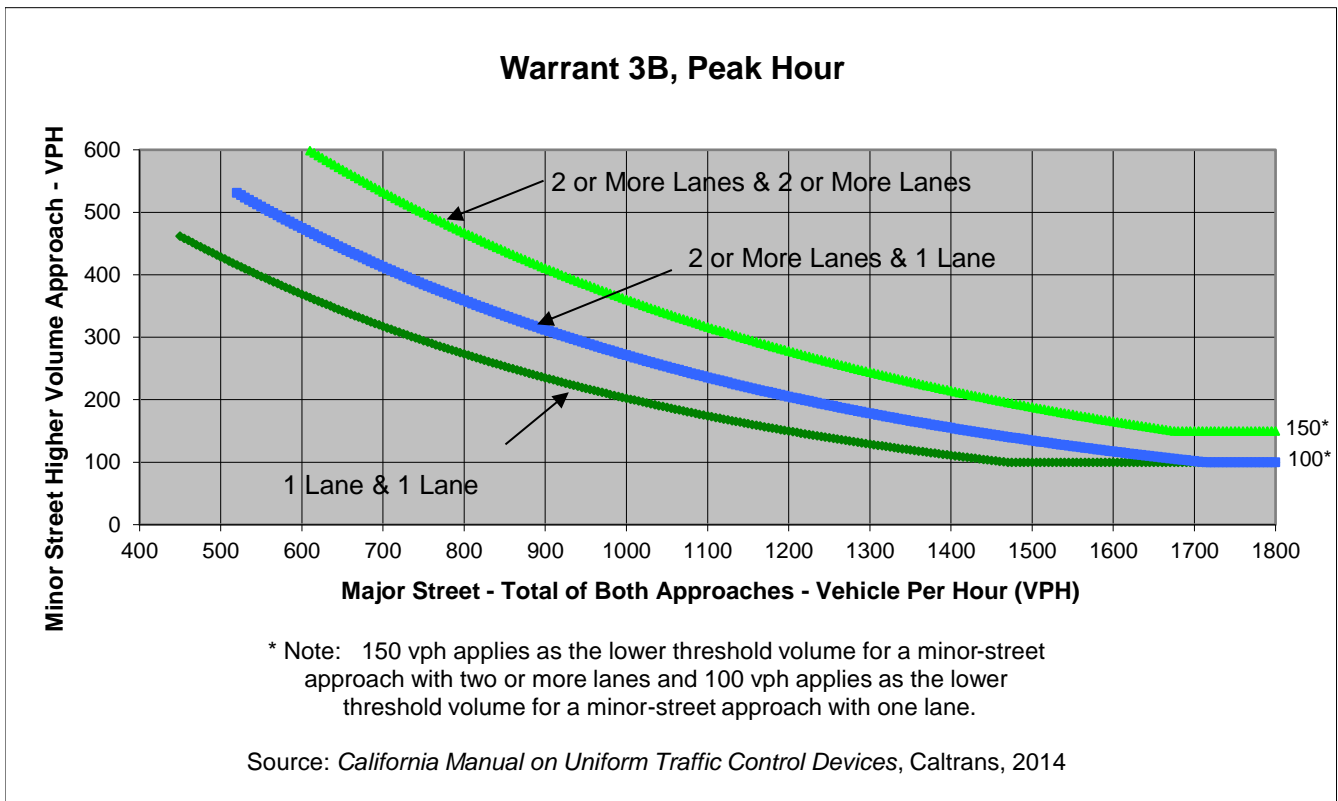
Project 1744 Ruby St TIA
 Scenario Existing without Project
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	25	0	0	4
Through	0	0	11	6
Right	2	0	21	0
Total	27	0	32	10

Major Street Direction

	North/South
X	East/West



	Major Street	Minor Street	Warrant Met
	Crescent Ave	Ruby St	
Number of Approach Lanes	1	1	NO
Traffic Volume (VPH) *	42	27	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Ruby St

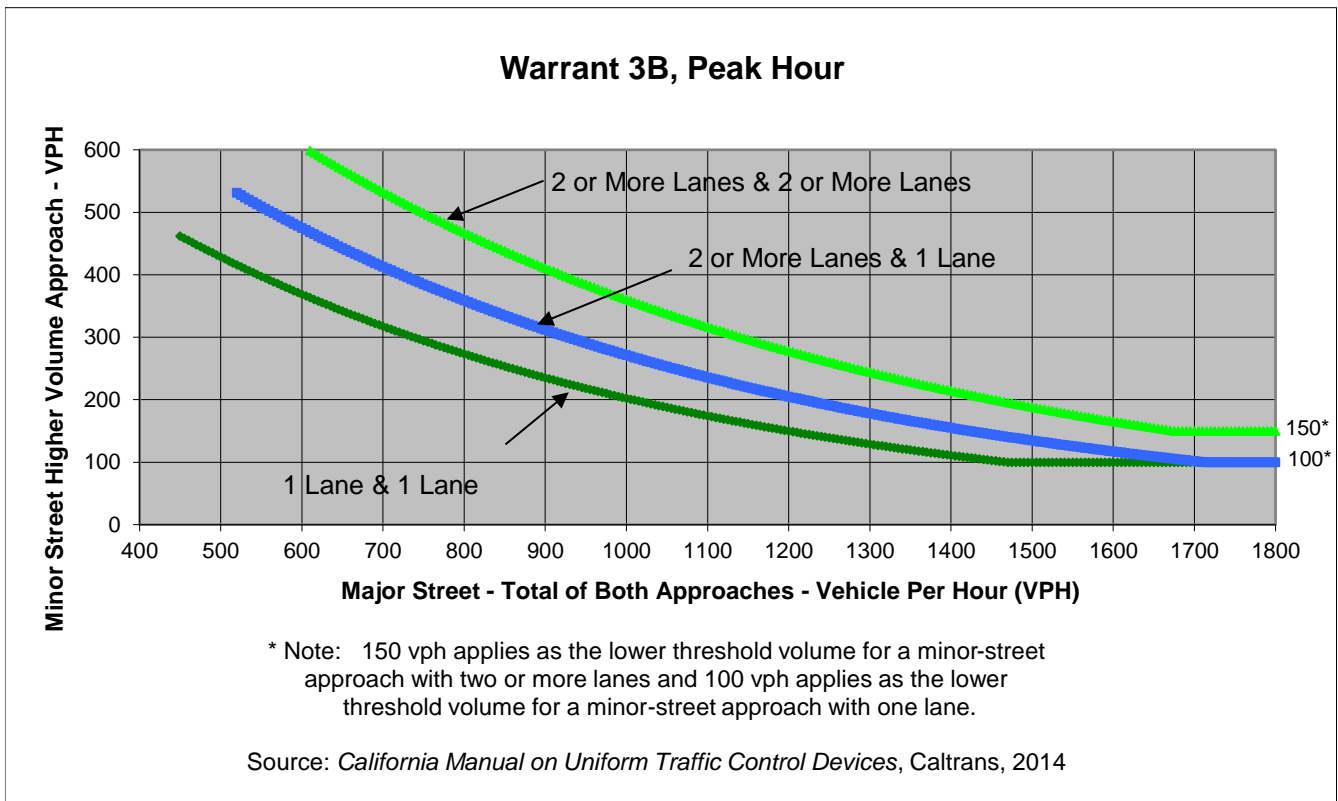
Project 1744 Ruby St TIA
 Scenario Existing without Project
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	66	0	1	0
Through	1,604	1,586	0	0
Right	0	5	52	0
Total	1,670	1,591	53	0

Major Street Direction

X North/South
 East/West



	Major Street	Minor Street	Warrant Met
	A St	Ruby St	
Number of Approach Lanes	2	1	NO
Traffic Volume (VPH) *	3,261	53	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Crescent Ave

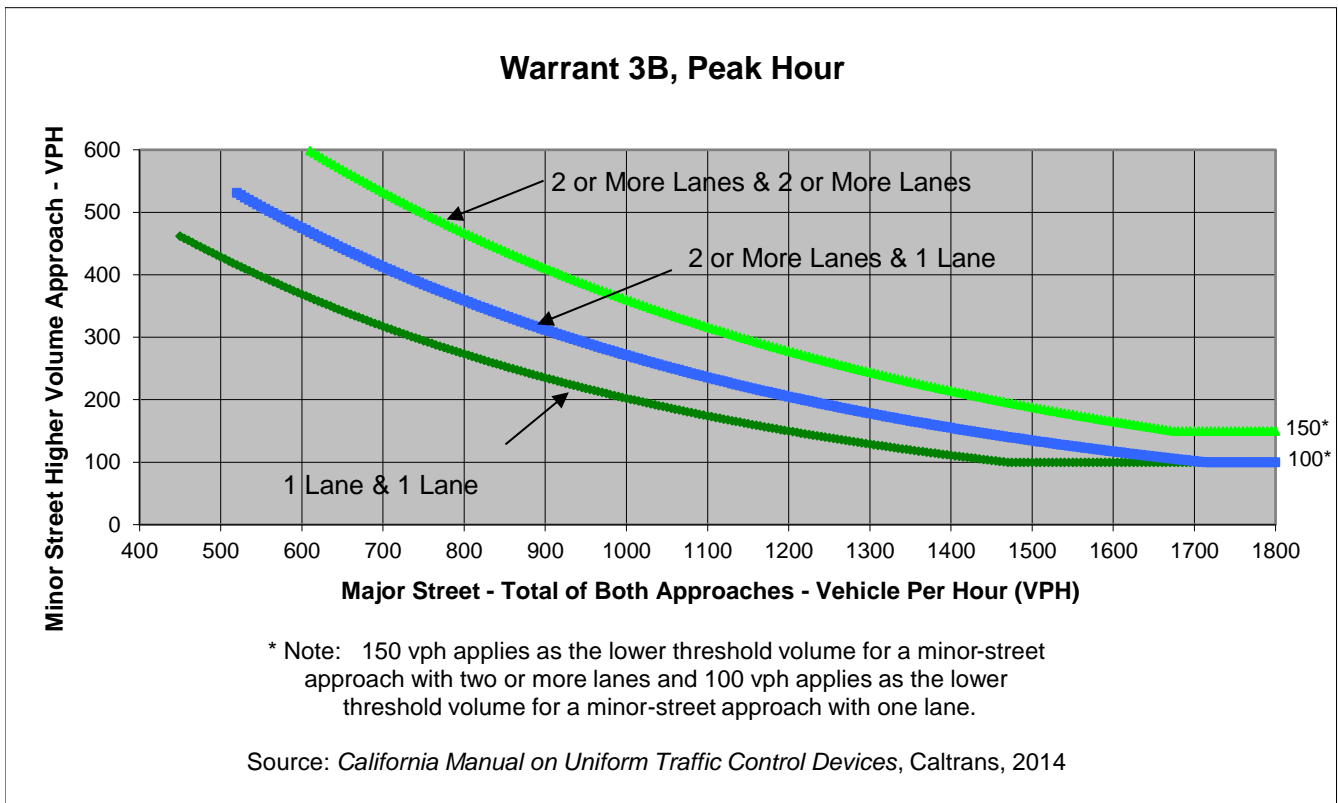
Project 1744 Ruby St TIA
 Scenario Existing without Project
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	0	1	0
Through	1,613	1,582	0	0
Right	0	9	3	0
Total	1,616	1,591	4	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Crescent Ave	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,207	4	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Crescent Ave
 Minor Street Ruby St

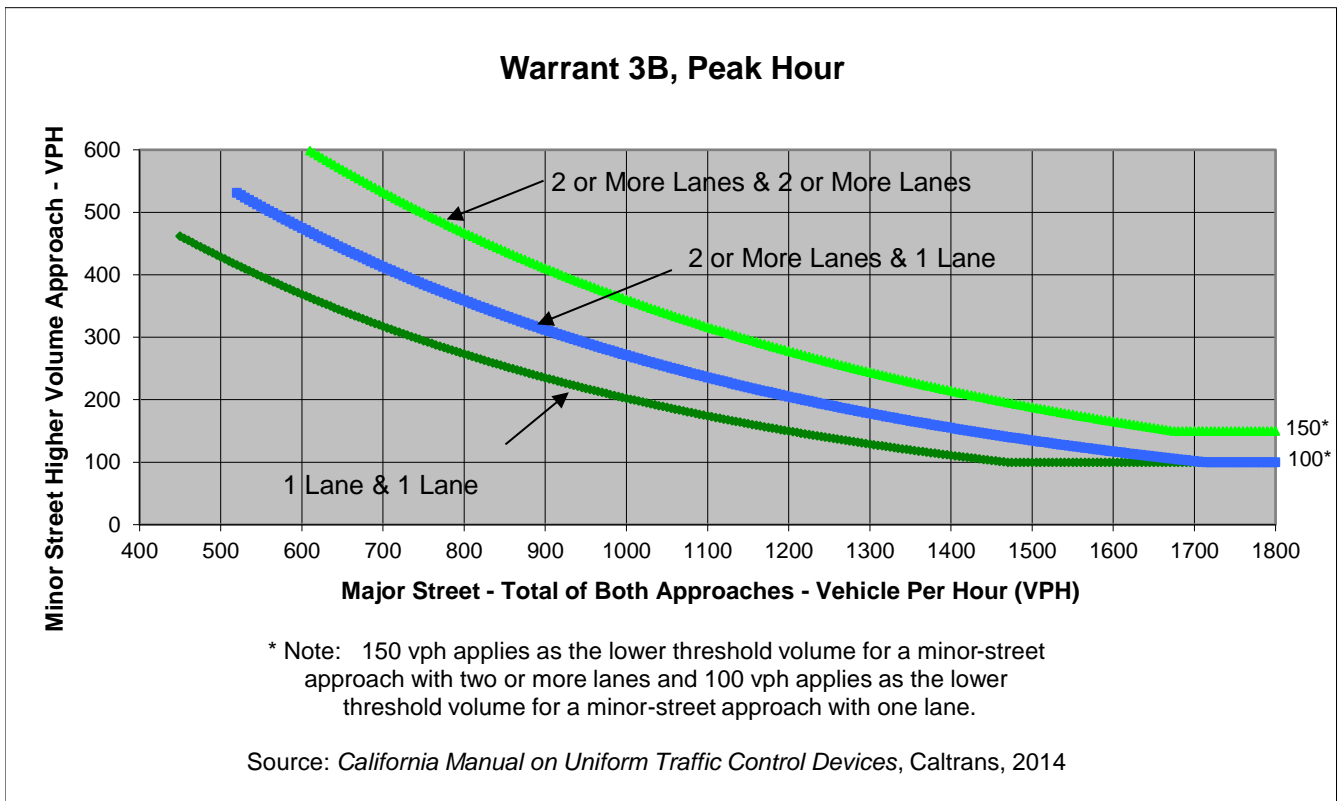
Project 1744 Ruby St TIA
 Scenario Existing with Project
 Peak Hour AM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	40	0	0	2
Through	0	0	12	13
Right	4	0	34	0
Total	44	0	46	15

Major Street Direction

	North/South
X	East/West



	Major Street	Minor Street	Warrant Met
	Crescent Ave	Ruby St	
Number of Approach Lanes	1	1	NO
Traffic Volume (VPH) *	61	44	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Ruby St

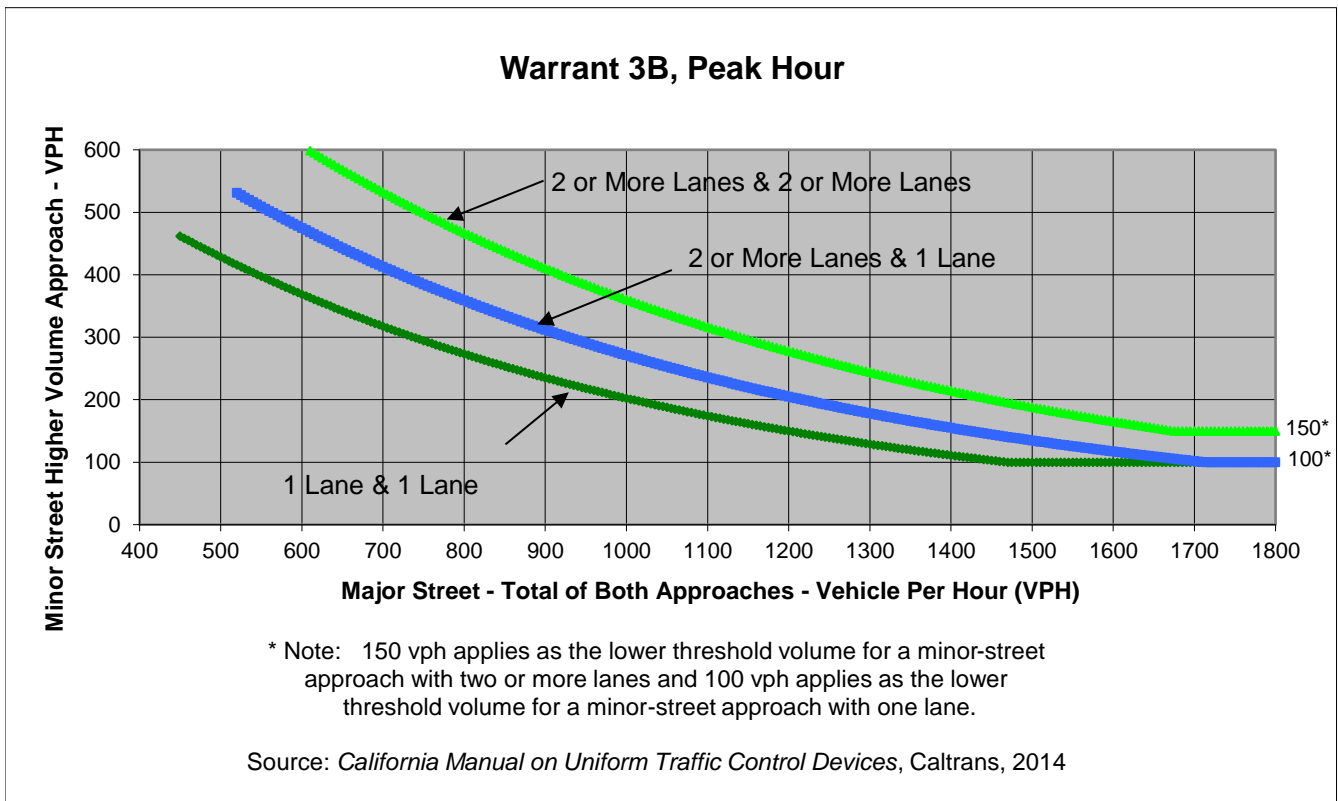
Project 1744 Ruby St TIA
 Scenario Existing with Project
 Peak Hour AM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	61	0	8	0
Through	1,457	1,677	0	0
Right	0	3	74	0
Total	1,518	1,680	82	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Ruby St	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,198	82	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street **A St**
 Minor Street **Crescent Ave**

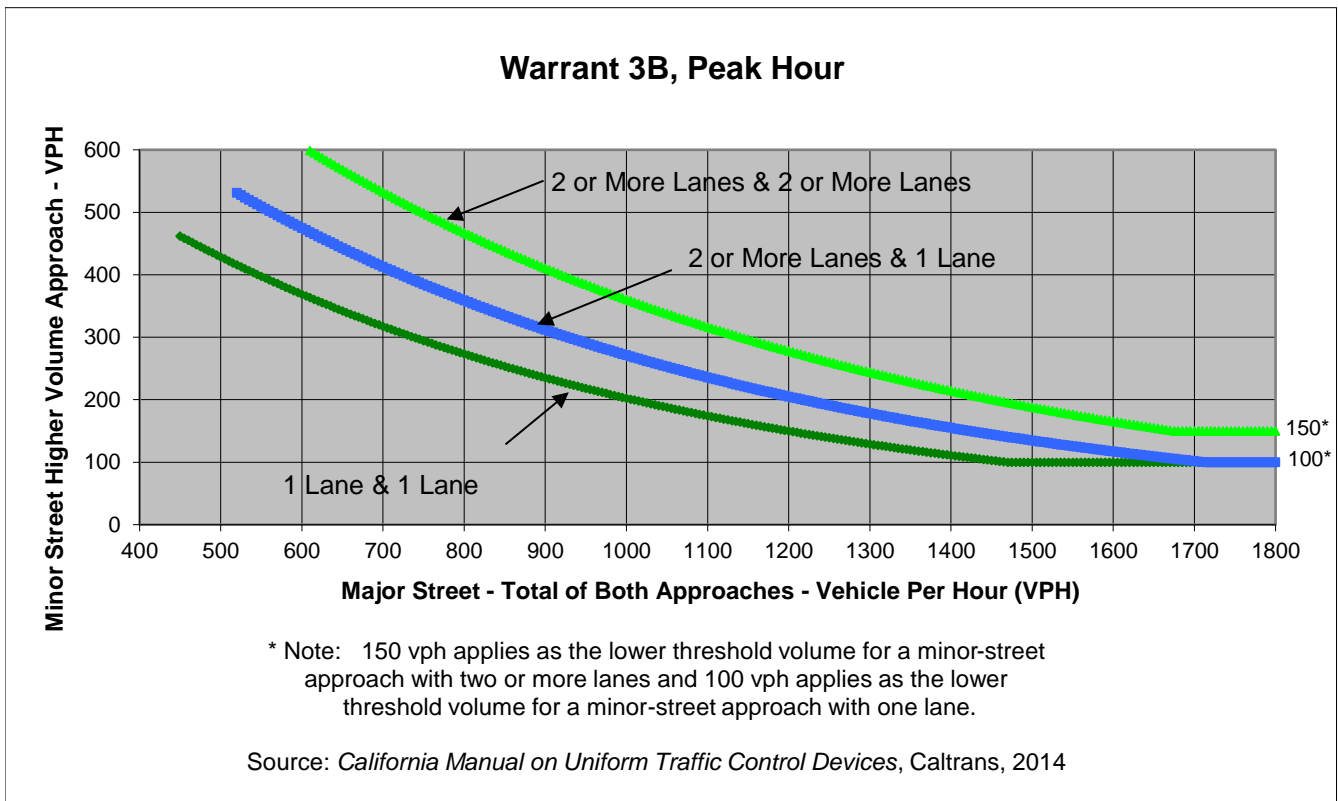
Project **1744 Ruby St TIA**
 Scenario **Existing with Project**
 Peak Hour **AM Peak**

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	10	0
Through	1,450	1,654	0	0
Right	0	12	0	0
Total	1,452	1,666	10	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Crescent Ave	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,118	10	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Crescent Ave
 Minor Street Ruby St

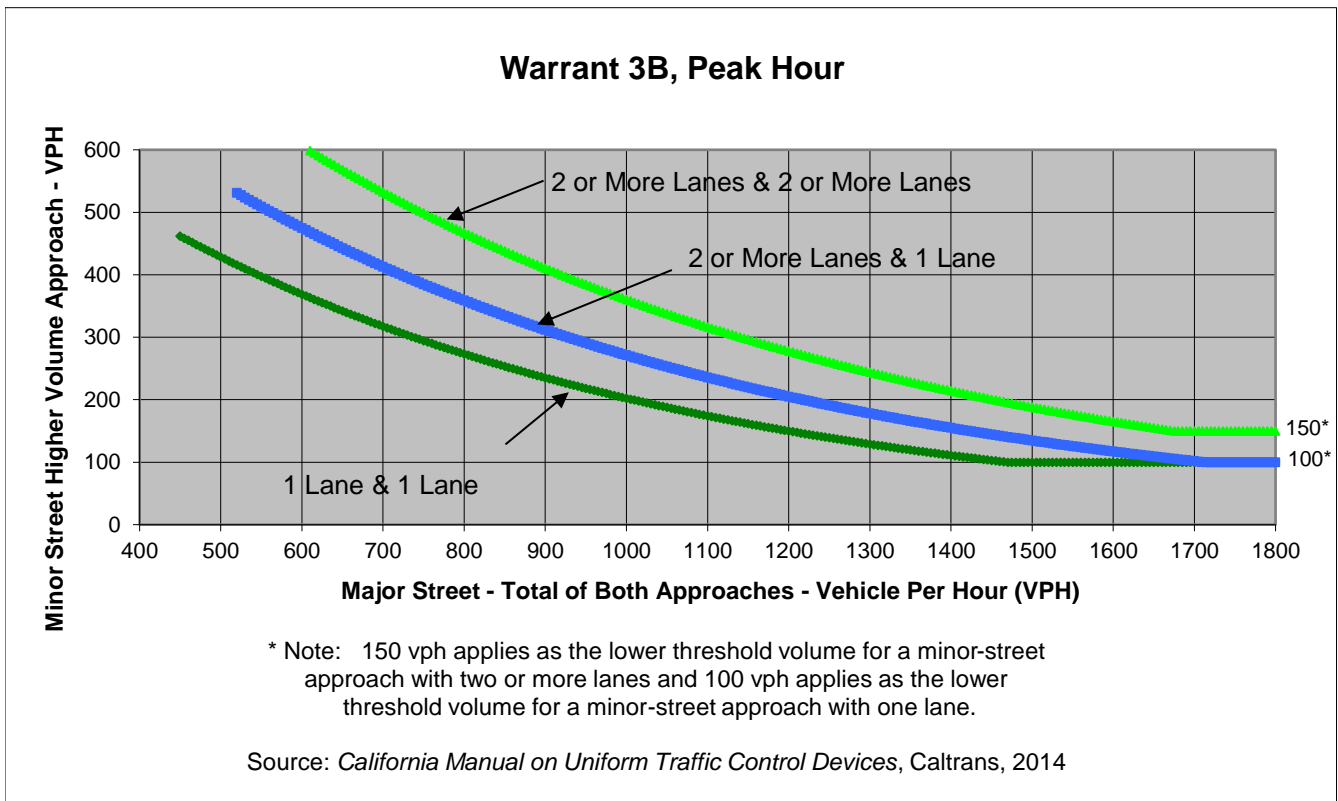
Project 1744 Ruby St TIA
 Scenario Existing with Project
 Peak Hour PM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	33	0	0	4
Through	0	0	15	15
Right	2	0	21	0
Total	35	0	36	19

Major Street Direction

	North/South
X	East/West



	Major Street	Minor Street	Warrant Met
	Crescent Ave	Ruby St	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	55	35	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Ruby St

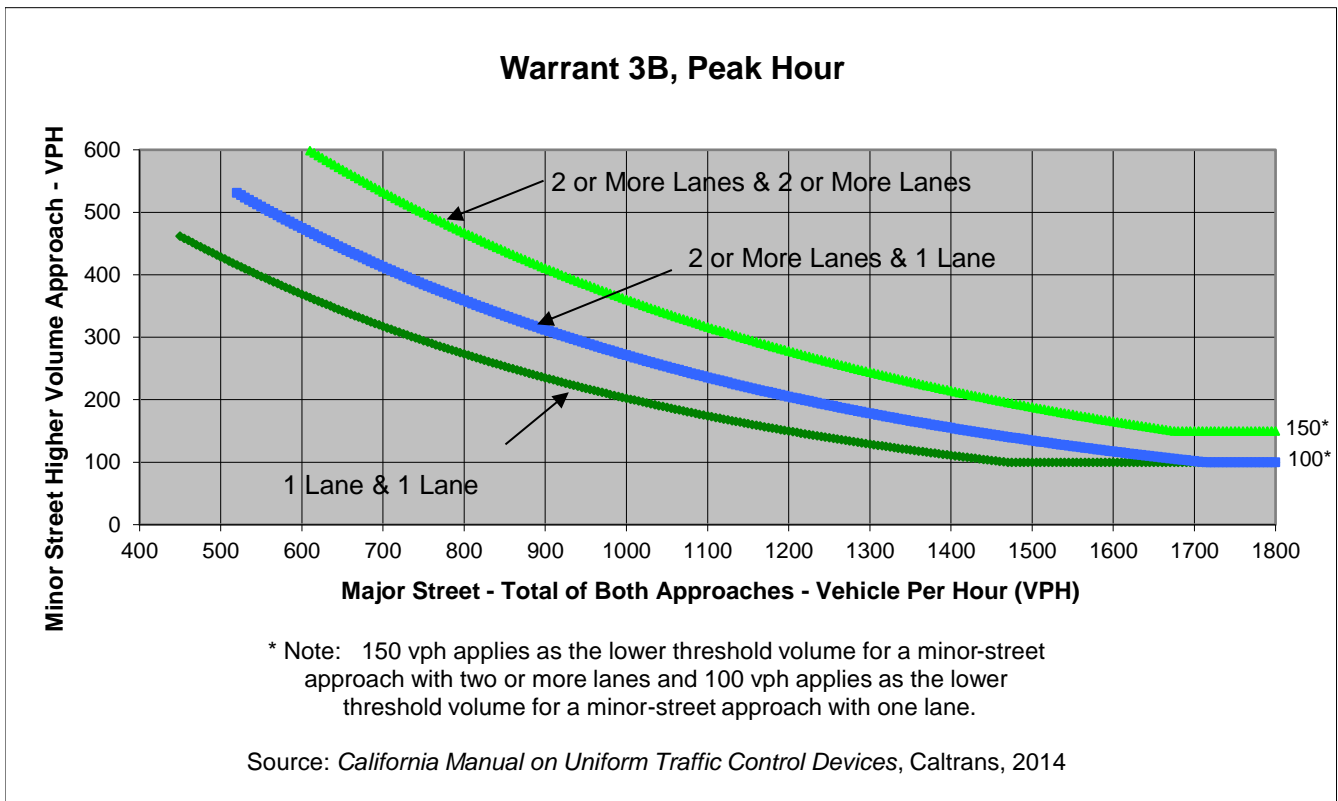
Project 1744 Ruby St TIA
 Scenario Existing with Project
 Peak Hour PM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	74	0	6	0
Through	1,604	1,586	0	0
Right	0	10	57	0
Total	1,678	1,596	63	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Ruby St	
Number of Approach Lanes	2	1	NO
Traffic Volume (VPH) *	3,274	63	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Crescent Ave

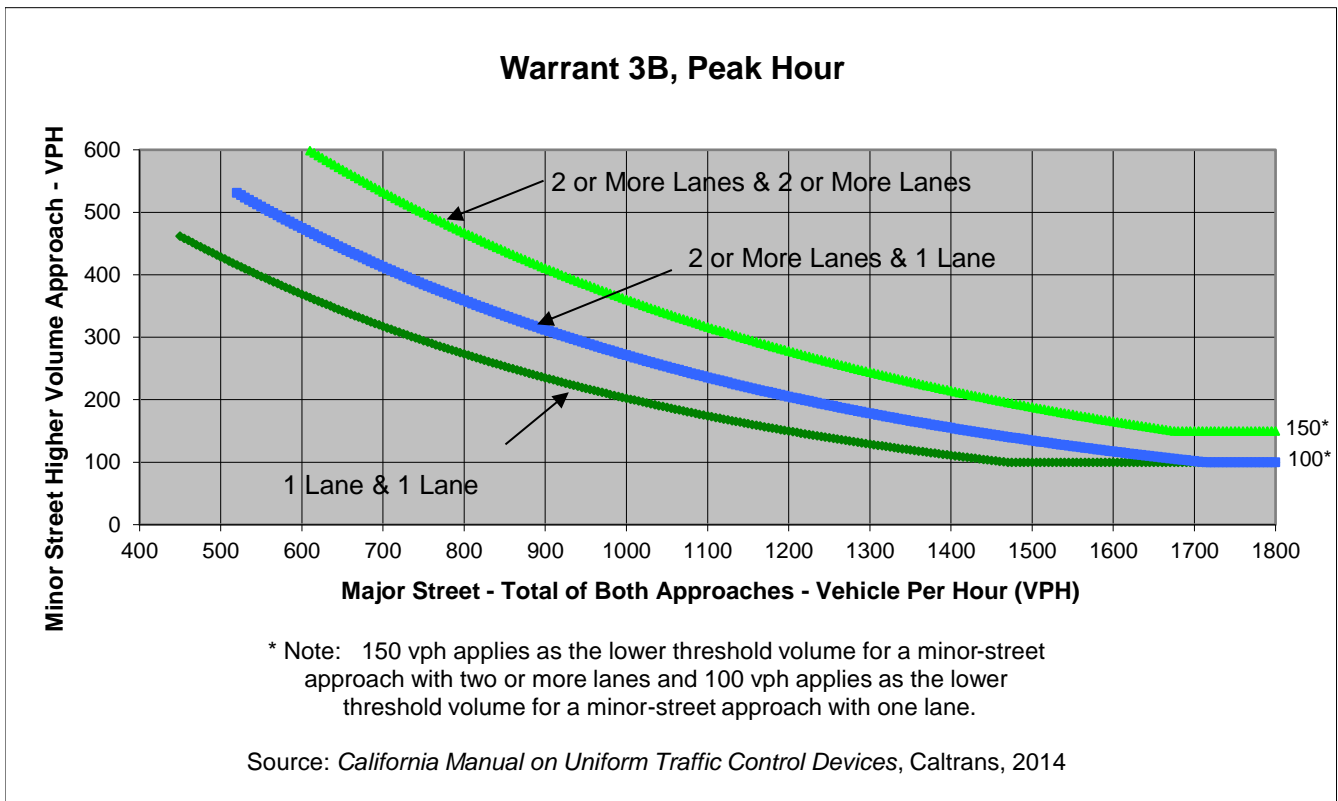
Project 1744 Ruby St TIA
 Scenario Existing with Project
 Peak Hour PM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	0	5	0
Through	1,618	1,587	0	0
Right	0	16	3	0
Total	1,621	1,603	8	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Crescent Ave	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,224	8	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Crescent Ave
 Minor Street Ruby St

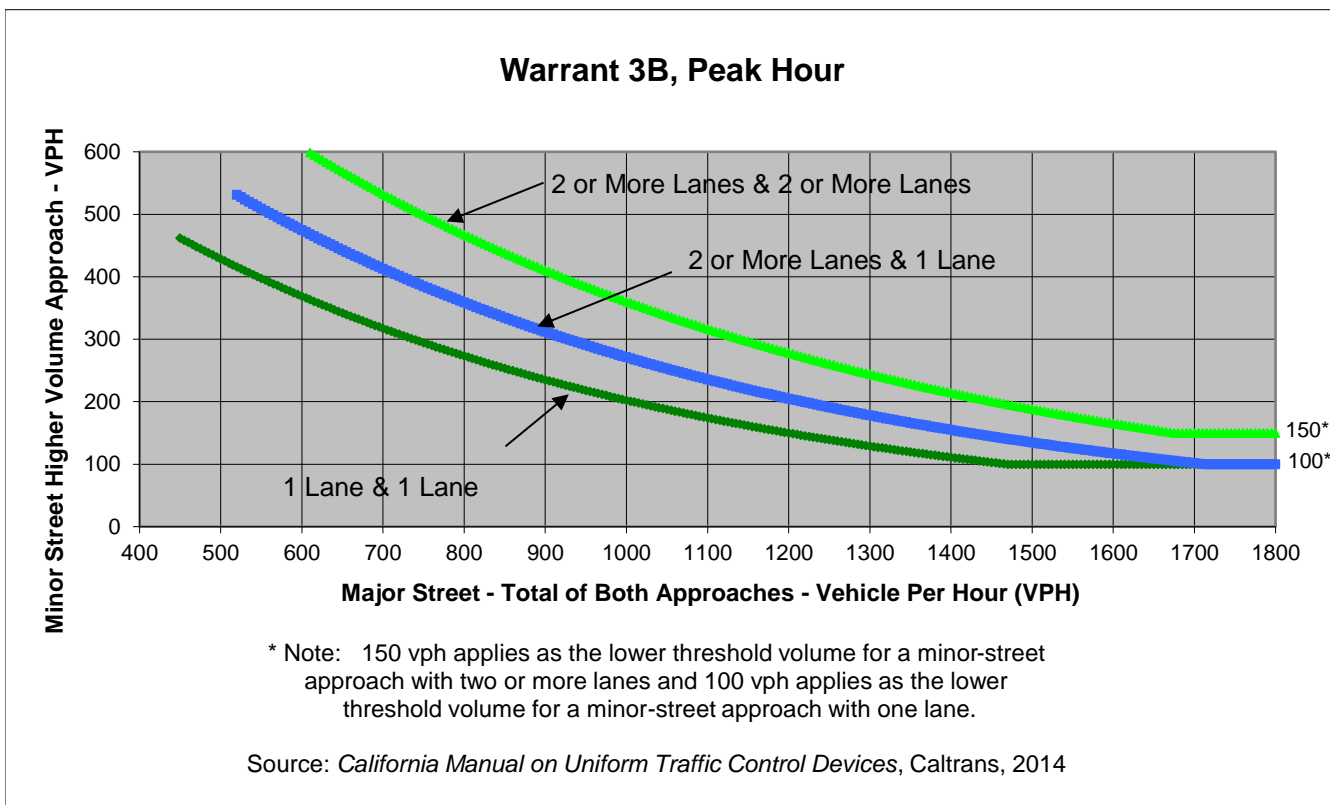
Project 1744 Ruby St TIA
 Scenario Cumulative without Project
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	47	0	0	2
Through	0	0	7	12
Right	4	0	42	0
Total	51	0	49	14

Major Street Direction

	North/South
X	East/West



	Major Street	Minor Street	Warrant Met
	Crescent Ave	Ruby St	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	63	51	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Ruby St

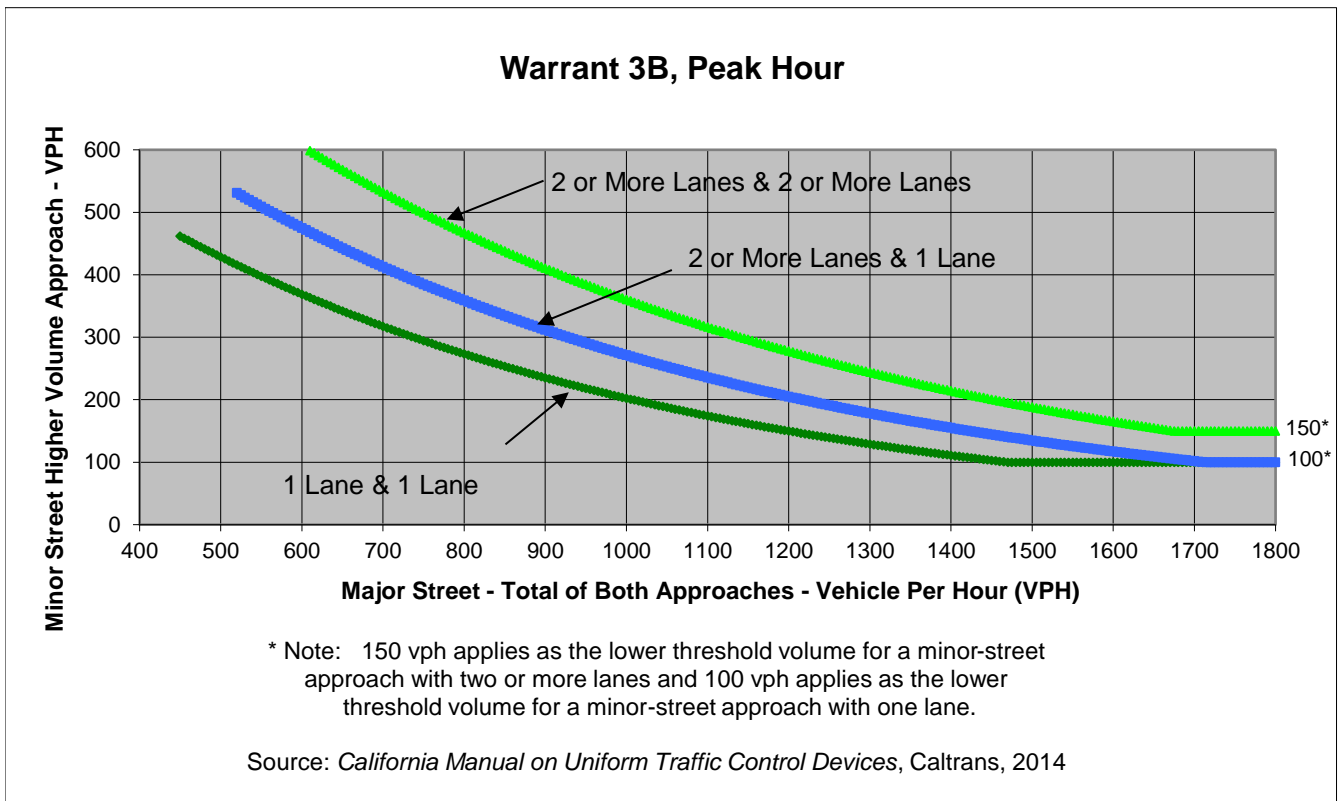
Project 1744 Ruby St TIA
 Scenario Cumulative without Project
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	73	0	0	0
Through	1,813	2,087	0	0
Right	0	1	83	0
Total	1,886	2,088	83	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Ruby St	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,974	83	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Crescent Ave

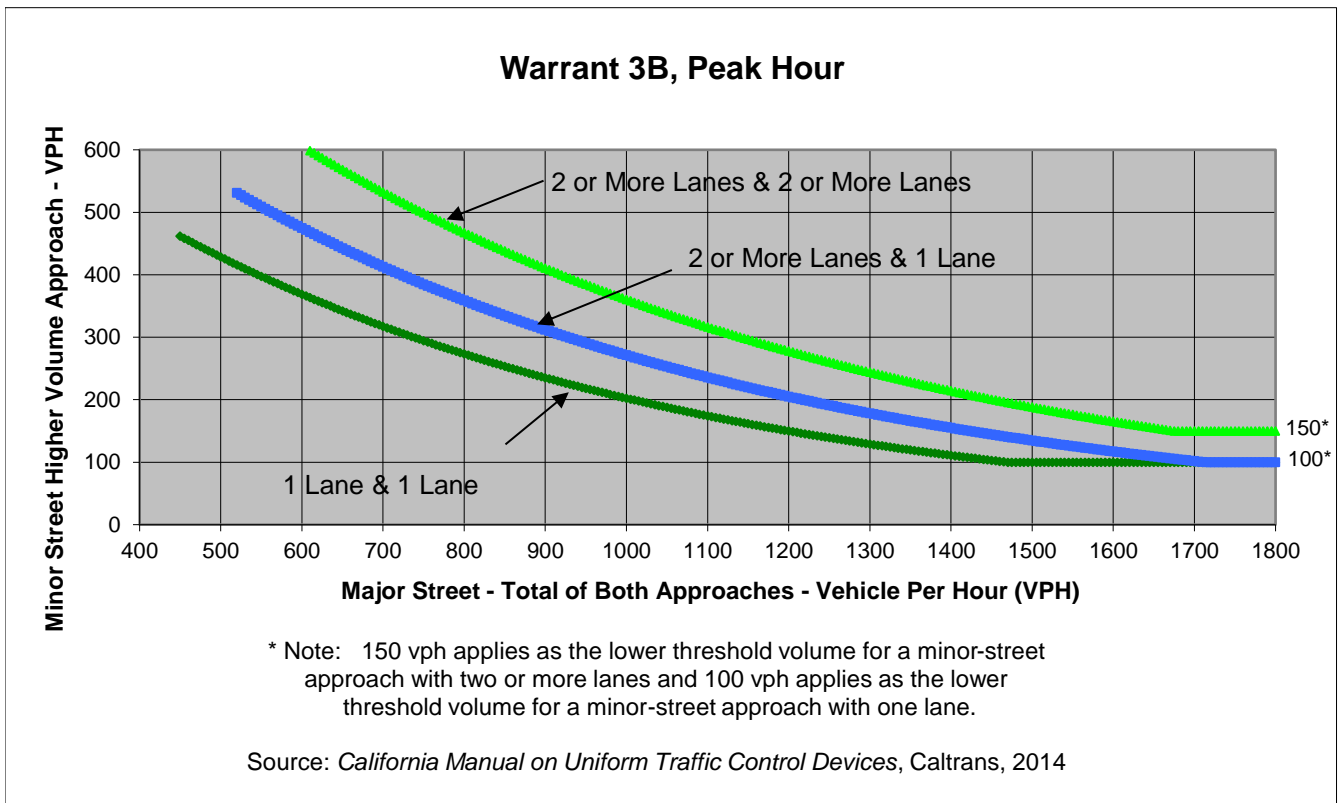
Project 1744 Ruby St TIA
 Scenario Cumulative without Project
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	4	0
Through	1,794	2,056	0	0
Right	0	12	0	0
Total	1,796	2,068	4	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Crescent Ave	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,864	4	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Crescent Ave
 Minor Street Ruby St

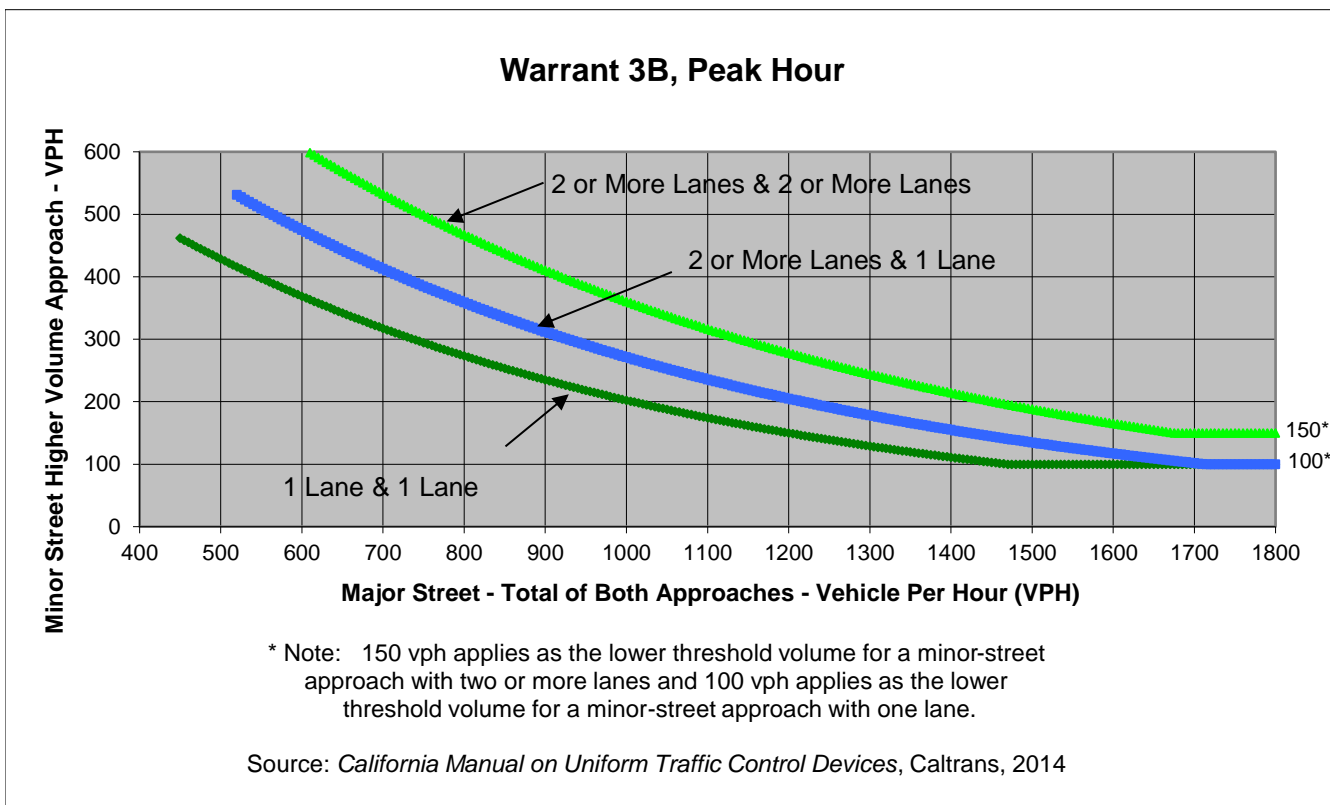
Project 1744 Ruby St TIA
 Scenario Cumulative without Project
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	31	0	0	4
Through	0	0	13	7
Right	2	0	26	0
Total	33	0	39	11

Major Street Direction

	North/South
X	East/West



	Major Street	Minor Street	Warrant Met
	Crescent Ave	Ruby St	
Number of Approach Lanes	1	1	NO
Traffic Volume (VPH) *	50	33	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Ruby St

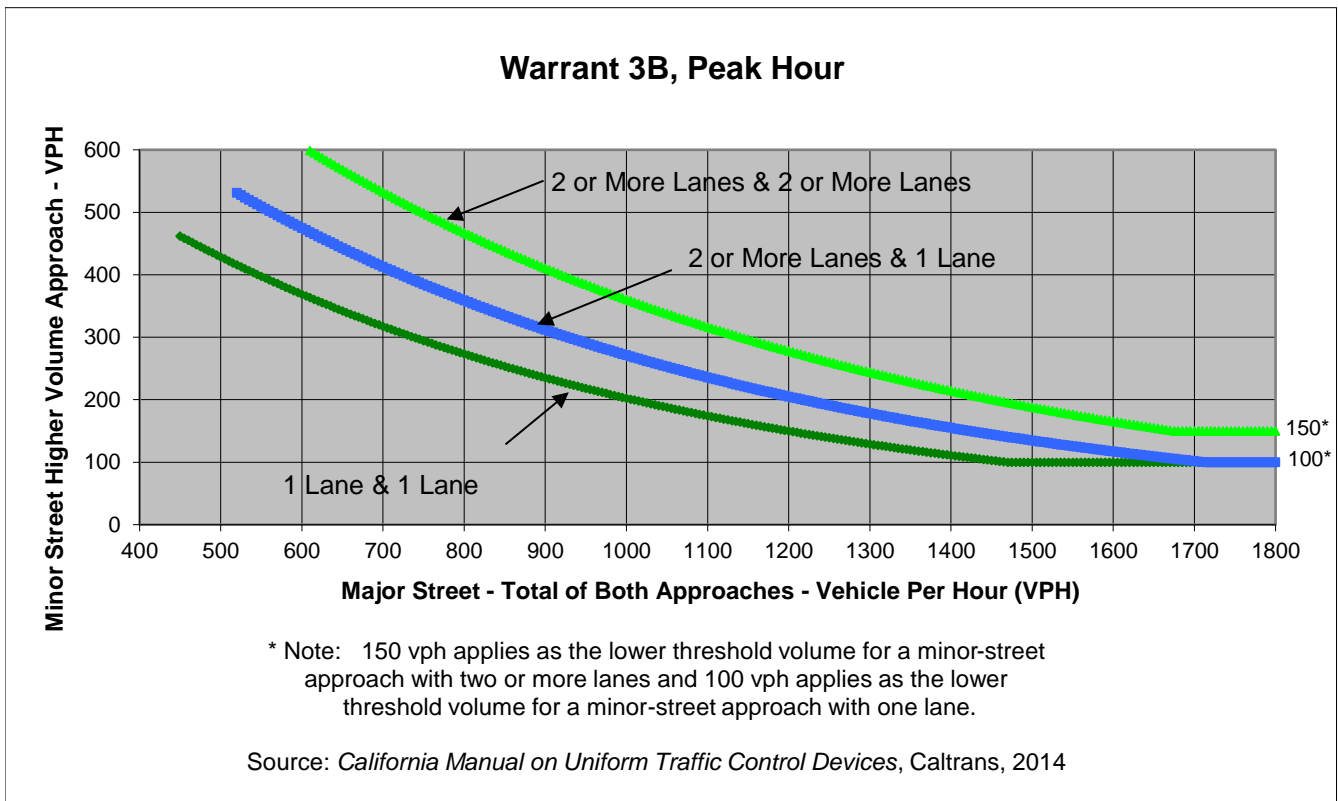
Project 1744 Ruby St TIA
 Scenario Cumulative without Project
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	82	0	1	0
Through	1,996	1,974	0	0
Right	0	6	64	0
Total	2,078	1,980	65	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Ruby St	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	4,058	65	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Crescent Ave

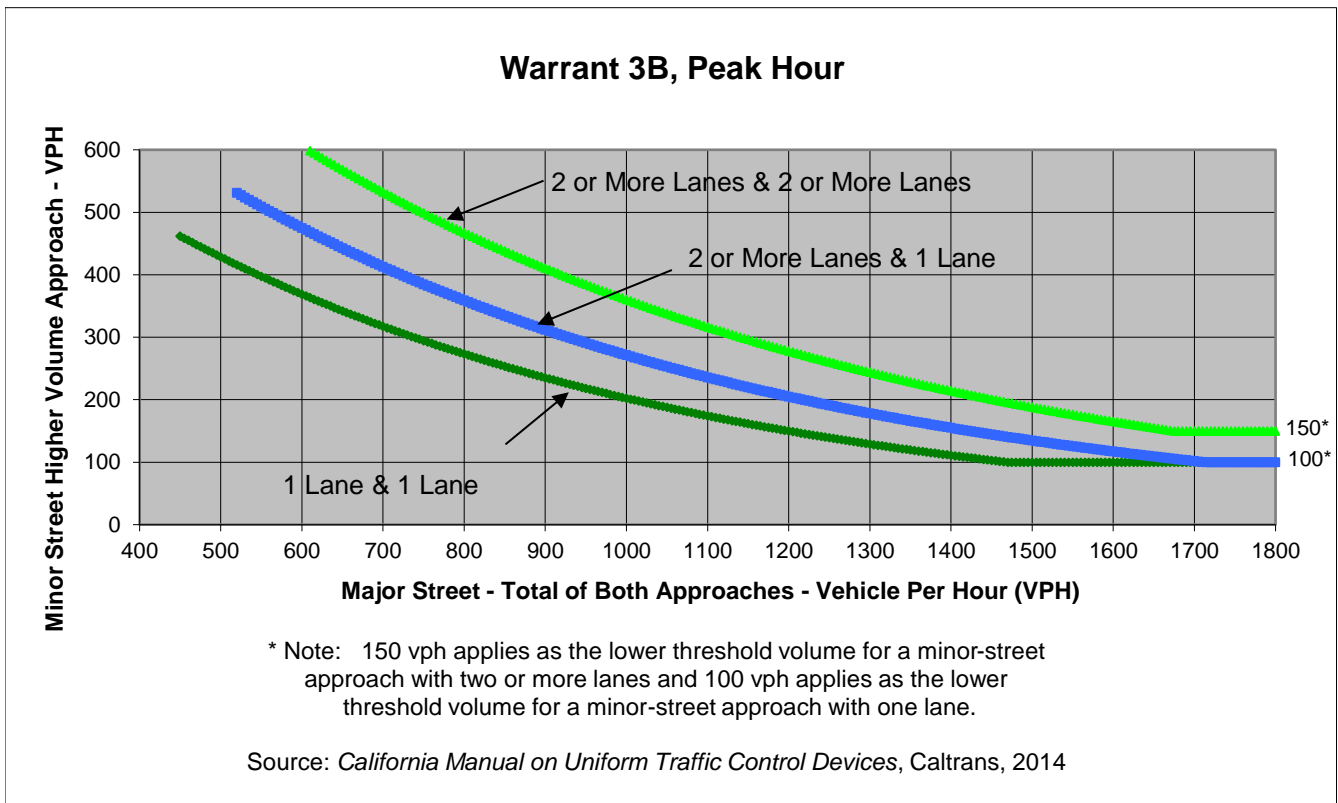
Project 1744 Ruby St TIA
 Scenario Cumulative without Project
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	0	1	0
Through	2,007	1,969	0	0
Right	0	11	3	0
Total	2,010	1,980	4	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Crescent Ave	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,990	4	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Crescent Ave
 Minor Street Ruby St

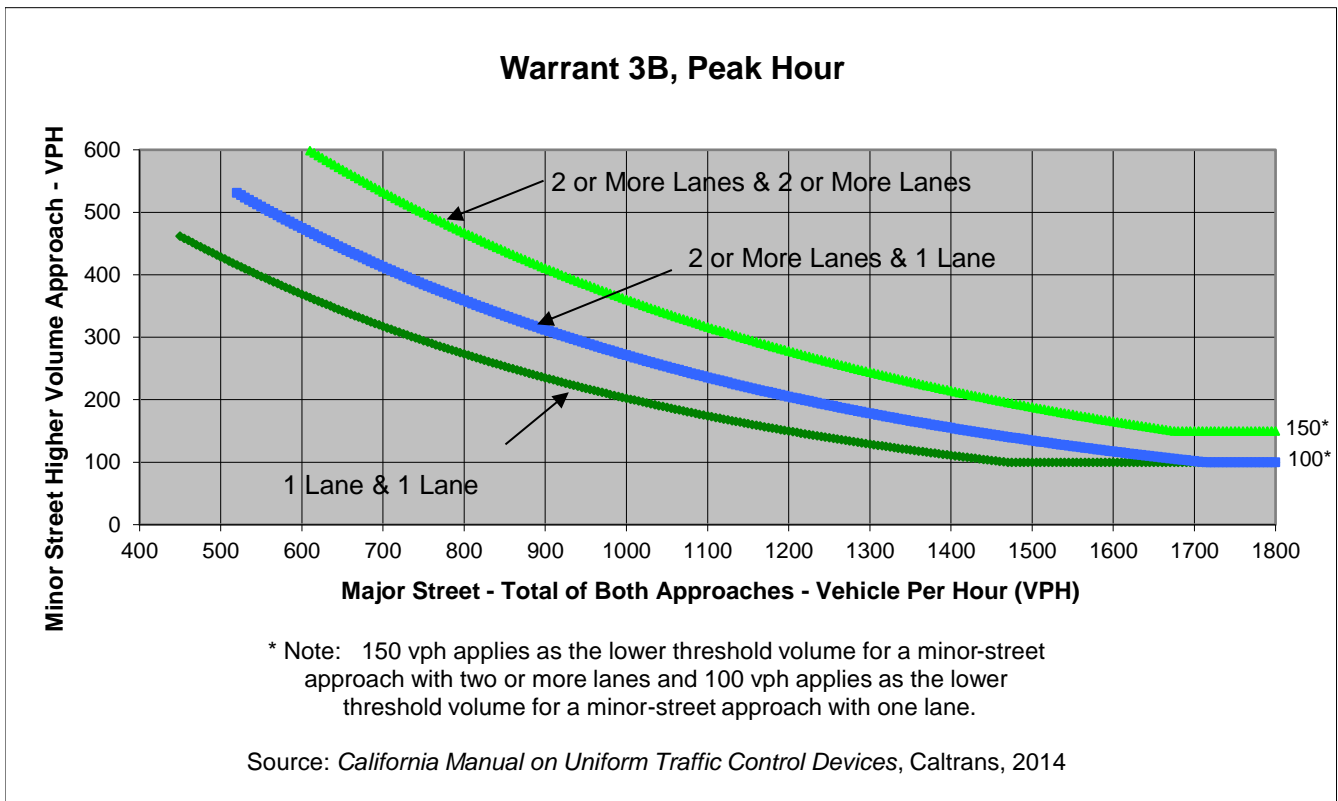
Project 1744 Ruby St TIA
 Scenario Cumulative with Project
 Peak Hour AM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	49	0	0	2
Through	0	0	13	15
Right	4	0	42	0
Total	53	0	55	17

Major Street Direction

	North/South
X	East/West



	Major Street	Minor Street	Warrant Met
	Crescent Ave	Ruby St	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	72	53	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Ruby St

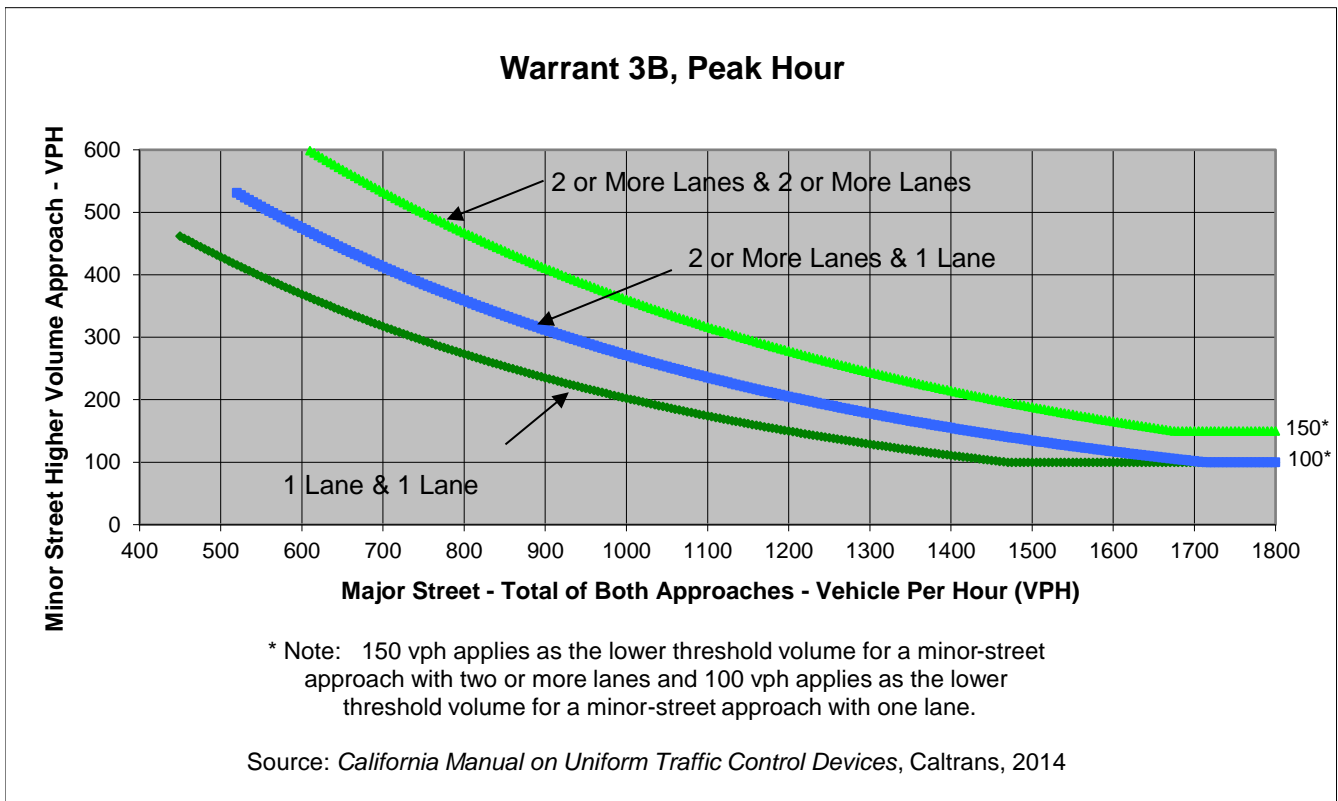
Project 1744 Ruby St TIA
 Scenario Cumulative with Project
 Peak Hour AM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	75	0	8	0
Through	1,813	2,087	0	0
Right	0	3	90	0
Total	1,888	2,090	98	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Ruby St	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,978	98	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street A St
 Minor Street Crescent Ave

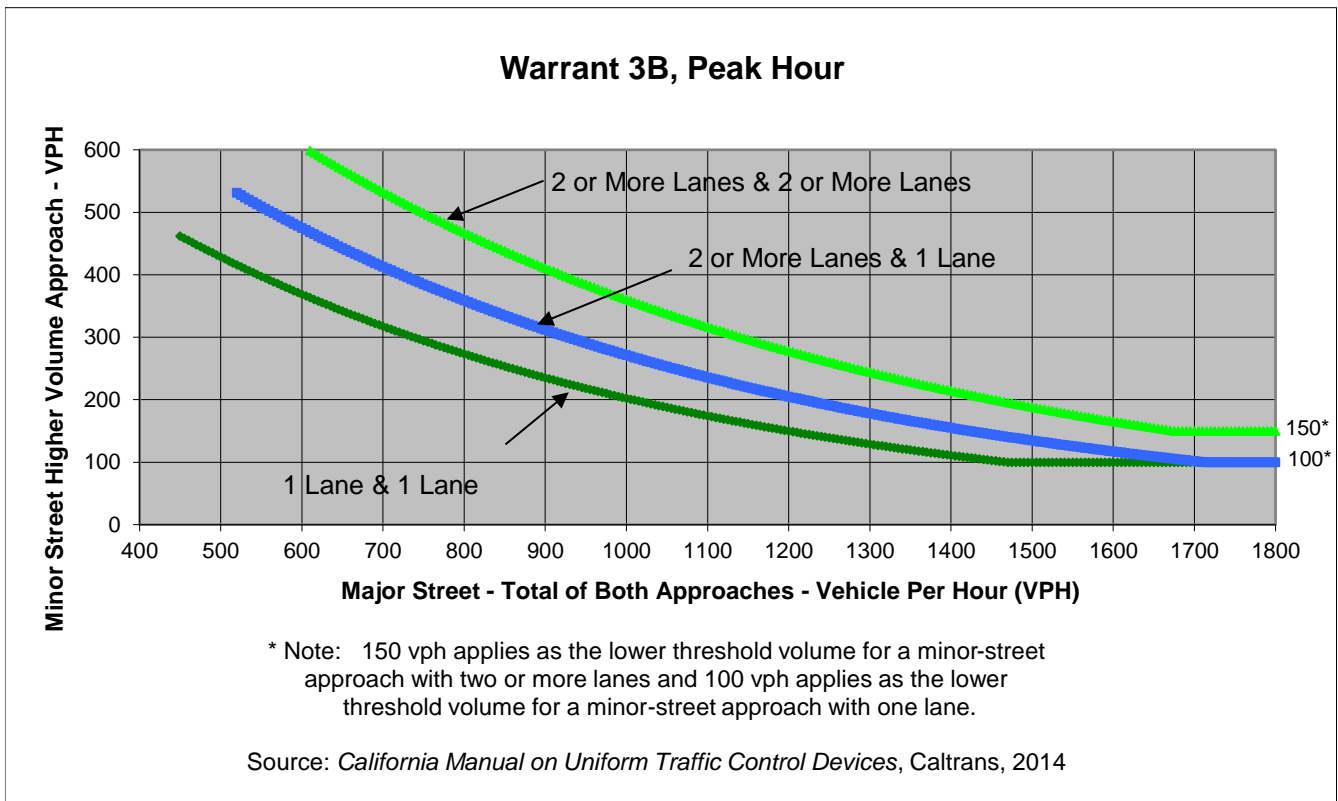
Project 1744 Ruby St TIA
 Scenario Cumulative with Project
 Peak Hour AM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	10	0
Through	1,802	2,058	0	0
Right	0	14	0	0
Total	1,804	2,072	10	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Crescent Ave	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	3,876	10	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Crescent Ave
 Minor Street Ruby St

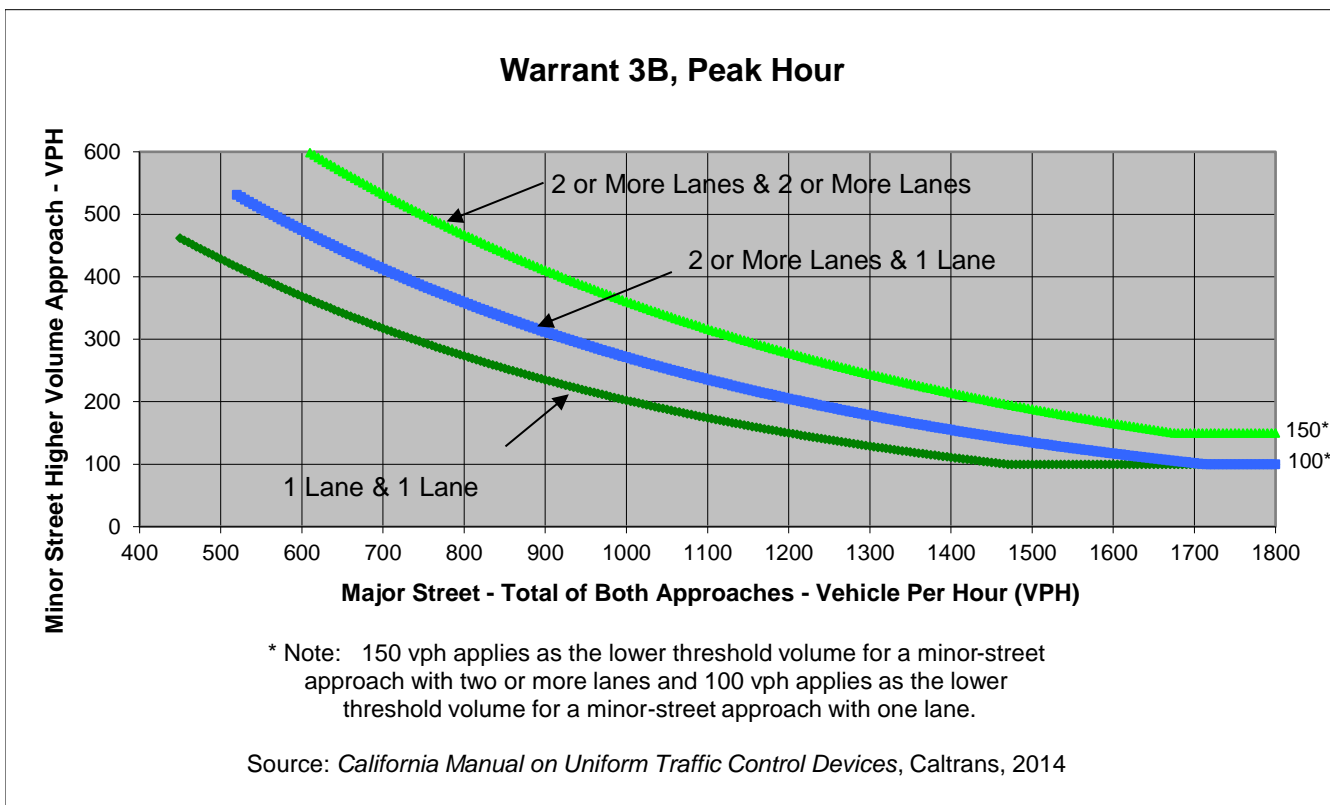
Project 1744 Ruby St TIA
 Scenario Cumulative with Project
 Peak Hour PM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	39	0	0	4
Through	0	0	17	16
Right	2	0	26	0
Total	41	0	43	20

Major Street Direction

 North/South
 X East/West



	Major Street	Minor Street	Warrant Met
	Crescent Ave	Ruby St	
Number of Approach Lanes	1	1	NO
Traffic Volume (VPH) *	63	41	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Ruby St

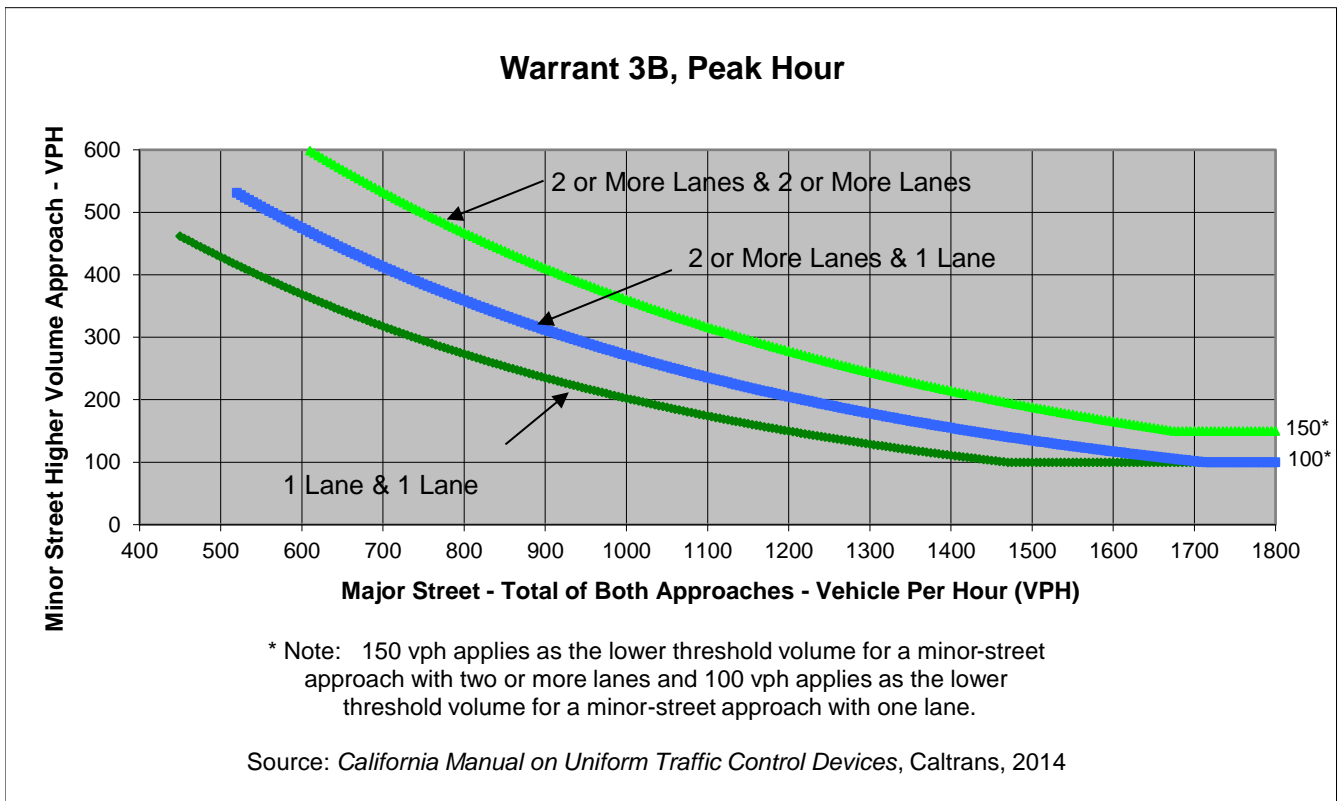
Project 1744 Ruby St TIA
 Scenario Cumulative with Project
 Peak Hour PM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	90	0	6	0
Through	1,996	1,974	0	0
Right	0	11	69	0
Total	2,086	1,985	75	0

Major Street Direction

X North/South
 East/West



	Major Street	Minor Street	Warrant Met
	A St	Ruby St	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	4,071	75	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street A St
 Minor Street Crescent Ave

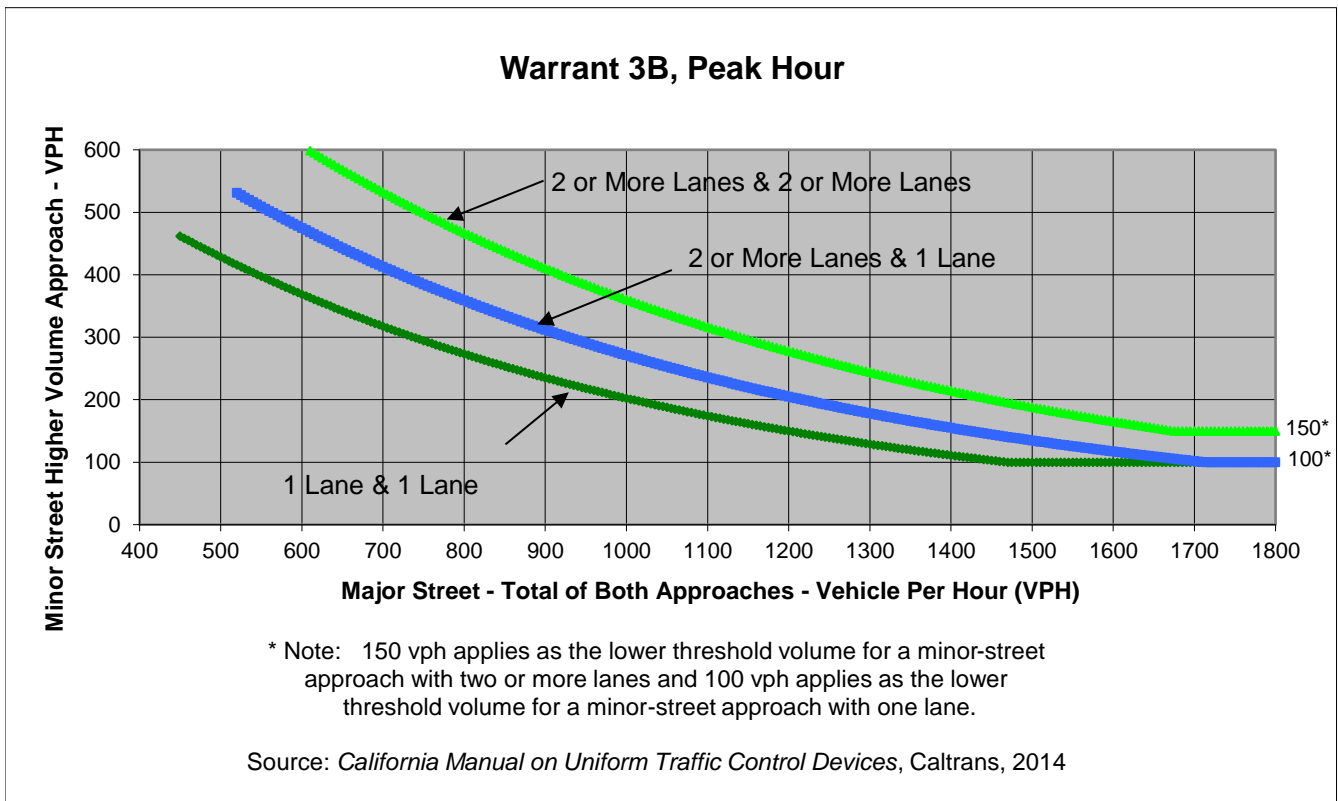
Project 1744 Ruby St TIA
 Scenario Cumulative with Project
 Peak Hour PM Peak

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	0	5	0
Through	2,012	1,974	0	0
Right	0	18	3	0
Total	2,015	1,992	8	0

Major Street Direction

X	North/South
	East/West



	Major Street	Minor Street	Warrant Met
	A St	Crescent Ave	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	4,007	8	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.