INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: AM Peak Hour Lanes: Restriped

Traffic Condition: 2006 Peak Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 73 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	32	32	35	30	322	16	365	20	122	864	58	33	1929
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	2.00	0.00	1.00	2.00	0.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; ARROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	34	34	37	371	0	17	405	0	128	971	0	35	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	3800	0	1800	3800	0	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.04	0.04	0.02	0.20	0.00	0.01	0.11	0.00	0.07	0.26	0.00	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.24	0.00	0.11	0.15	0.00	0.11	0.30	0.00	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.24	0.00	0.00	0.00	0.00	0.11	0.30	0.00	0.00	.751
Critical Lane Group = XXXX			XXXX	XXXX					XXXX	XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.29	0.29	0.14	0.28	0.00	0.13	0.45	0.00	0.14	0.44	0.00	0.14	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	28.6	28.6	13.5	28.5	0.0	13.3	44.5	0.0	14.5	43.5	0.0	13.5	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	234	234	171	465	0	168	1539	0	189	1501	0	171	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.14	0.14	0.21	0.80	0.00	0.10	0.26	0.00	0.68	0.65	0.00	0.20	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	28.6	28.6	43.1	53.3	0.0	40.0	18.1	0.0	68.1	25.7	0.0	42.8	32.72
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	71	71	86	72	0	87	55	0	86	56	0	86	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.3	1.3	0.9	7.4	0.0	0.4	3.1	0.0	3.0	7.6	0.0	0.8	4.39
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	C	C	D	D-	A+	D+	B-	A+	E	C	A+	D	C-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	33.8 Sec; LOS = C-			52.7 Sec; LOS = D-			30.2 Sec; LOS = C-			26.3 Sec; LOS = C			C-

Signal Timing, Secs: Phase 1 = 13.5; Phase 2 = 1.0; Phase 3 = 0.0; Phase 4 = 43.5; Phase 5 = 13.3; Phase 6 = 0.2; Phase 7 = 0.0; Phase 8 = 28.5. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 13.5; Phase 3 = 14.5; Phase 4 = 14.5; Phase 5 = 58.0; Phase 6 = 71.4; Phase 7 = 71.5; Phase 8 = 71.5.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: PM Peak Hour Lanes: Restriped

Traffic Condition: 2006 Peak Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 96 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	24	60	51	29	234	28	1189	34	201	597	17	45	2509
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	2.00	0.00	1.00	2.00	0.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	25	63	54	277	0	29	1287	0	212	646	0	47	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	3800	0	1800	3800	0	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.03	0.07	0.03	0.15	0.00	0.02	0.34	0.00	0.12	0.17	0.00	0.03	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.19	0.00	0.11	0.38	0.00	0.16	0.21	0.00	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.19	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.11	.784
Critical Lane Group = XXXX			XXXX	XXXX			XXXX					XXXX	
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.22	0.22	0.13	0.22	0.00	0.13	0.52	0.00	0.20	0.46	0.00	0.13	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	21.8	21.8	13.1	21.6	0.0	12.9	52.3	0.0	19.6	45.7	0.0	13.0	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed ÷ 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	169	169	163	335	0	160	1835	0	281	1584	0	162	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.15	0.37	0.33	0.83	0.00	0.18	0.70	0.00	0.75	0.41	0.00	0.29	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	34.6	43.2	48.0	67.4	0.0	42.9	21.6	0.0	63.5	19.4	0.0	46.6	31.10
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	78	78	87	78	0	87	48	0	80	54	0	87	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.1	2.7	1.3	6.0	0.0	0.7	8.5	0.0	4.7	4.9	0.0	1.1	5.78
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	C-	D	D	E	A+	D	C+	A+	E	B-	A+	D	C-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	43.5 Sec; LOS = D			65.0 Sec; LOS = E			27.5 Sec; LOS = C			21.3 Sec; LOS = C+			C-

Signal Timing, Secs: Phase 1 = 13.0; Phase 2 = 6.6; Phase 3 = 0.0; Phase 4 = 45.7; Phase 5 = 12.9; Phase 6 = 0.2; Phase 7 = 0.0; Phase 8 = 21.6. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 13.0; Phase 3 = 19.6; Phase 4 = 19.6; Phase 5 = 65.3; Phase 6 = 78.2; Phase 7 = 78.4; Phase 8 = 78.4.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: AM Peak Hour Lanes: Restriped

Traffic Condition: 2006 Peak Month With Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 72 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	32	32	35	30	338	39	365	20	127	864	66	33	1981
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	2.00	0.00	1.00	2.00	0.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	34	34	37	387	0	41	405	0	134	979	0	35	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	3800	0	1800	3800	0	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.04	0.04	0.02	0.20	0.00	0.02	0.11	0.00	0.07	0.26	0.00	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.24	0.00	0.11	0.15	0.00	0.11	0.30	0.00	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.24	0.00	0.00	0.00	0.00	0.11	0.30	0.00	0.00	.765
Critical Lane Group = XXXX			XXXX	XXXX					XXXX	XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.29	0.29	0.13	0.29	0.00	0.13	0.44	0.00	0.15	0.43	0.00	0.13	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	29.0	29.0	13.3	29.1	0.0	13.3	44.4	0.0	14.6	43.0	0.0	13.3	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	8	8	5	78	78	57	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	238	238	167	476	0	168	1534	0	192	1482	0	167	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.14	0.14	0.22	0.81	0.00	0.24	0.26	0.00	0.70	0.66	0.00	0.21	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	28.3	28.3	43.6	54.4	0.0	44.4	18.2	0.0	69.6	26.4	0.0	43.2	33.79
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	71	71	87	71	0	87	56	0	85	57	0	87	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.3	1.3	0.9	7.6	0.0	1.0	3.1	0.0	3.2	7.7	0.0	0.8	4.37
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	C	C	D	D-	A+	D	B-	A+	E	C	A+	D	C-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	33.7 Sec; LOS = C-			53.4 Sec; LOS = D-			31.0 Sec; LOS = C-			27.0 Sec; LOS = C			C-

Signal Timing, Secs: Phase 1 = 13.3; Phase 2 = 1.4; Phase 3 = 0.0; Phase 4 = 43.0; Phase 5 = 13.3; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 29.0. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 13.3; Phase 3 = 14.6; Phase 4 = 14.6; Phase 5 = 57.6; Phase 6 = 70.9; Phase 7 = 70.9; Phase 8 = 71.0.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: PM Peak Hour Lanes: Restriped

Traffic Condition: 2006 Peak Month With Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 94 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	24	60	51	29	244	43	1189	34	219	597	44	45	2579
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	2.00	0.00	1.00	2.00	0.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; ARROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	25	63	54	287	0	45	1287	0	231	675	0	47	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	3800	0	1800	3800	0	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.03	0.07	0.03	0.15	0.00	0.03	0.34	0.00	0.13	0.18	0.00	0.03	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.19	0.00	0.11	0.38	0.00	0.17	0.22	0.00	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.19	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.11	.790
Critical Lane Group = XXXX			XXXX	XXXX			XXXX					XXXX	
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.22	0.22	0.13	0.22	0.00	0.13	0.52	0.00	0.21	0.44	0.00	0.13	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	22.2	22.2	13.0	22.2	0.0	12.9	51.9	0.0	20.8	44.0	0.0	13.0	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	173	173	162	345	0	161	1819	0	303	1519	0	161	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.15	0.36	0.33	0.83	0.00	0.28	0.71	0.00	0.76	0.44	0.00	0.29	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	34.1	42.3	48.3	67.2	0.0	46.3	22.1	0.0	62.1	21.0	0.0	46.8	31.92
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	78	78	87	78	0	87	48	0	79	56	0	87	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.1	2.7	1.3	6.2	0.0	1.1	8.6	0.0	5.1	5.2	0.0	1.1	5.82
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	C-	D	D	E	A+	D	C+	A+	E+	C+	A+	D	C-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	43.1 Sec; LOS = D			64.4 Sec; LOS = E			28.1 Sec; LOS = C			22.7 Sec; LOS = C+			C-

Signal Timing, Secs: Phase 1 = 13.0; Phase 2 = 7.9; Phase 3 = 0.0; Phase 4 = 44.0; Phase 5 = 12.9; Phase 6 = 0.1; Phase 7 = 0.0; Phase 8 = 22.2. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 13.0; Phase 3 = 20.8; Phase 4 = 20.8; Phase 5 = 64.8; Phase 6 = 77.8; Phase 7 = 77.8; Phase 8 = 77.8.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 1. Stanfield Cutoff (NS) and North Shore (EW)
Time Period: AM Peak Hour Lanes: Existing

Traffic Condition: 2025 Average Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 26 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	0	66	58	0	0	0	24	73	0	56	0	386	663
(2) Number of Lanes, N	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	7.00
(3) Right Turns (FREE=Free Right Turn Lane; ARROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	61	69	0	0	0	0	25	77	0	465	0	0	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	1900	1900	0	1900	1900	0	1900	1900	0	1900	0	0	
(30) Flow Ratio, v/s = [(28)/(29)].	0.03	0.04	0.00	0.00	0.00	0.00	0.01	0.04	0.00	0.24	0.00	0.00	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.00	0.11	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.28	0.00	0.00	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	.394
Critical Lane Group = XXXX		XXXX								XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.00	0.28	0.00	0.00	0.00	0.00	0.72	0.72	0.00	0.72	0.00	0.00	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	0.0	27.9	0.0	0.0	0.0	0.0	72.1	72.1	0.0	72.1	0.0	0.0	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	16	0	0	16	0	0	19	0	0	19	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	0	453	0	0	0	0	1295	1295	0	1295	0	0	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.00	0.15	0.00	0.00	0.00	0.00	0.02	0.06	0.00	0.36	0.00	0.00	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	50.0	28.3	0.0	50.0	50.0	0.0	4.0	4.2	0.0	6.5	0.0	0.0	12.14
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	100	72	0	100	100	0	28	28	0	28	0	0	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.7	1.4	0.0	0.0	0.0	0.0	0.2	0.6	0.0	3.6	0.0	0.0	0.52
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	D-	C	A+	D-	D-	A+	A	A	A+	A	A+	A+	B+
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	38.5 Sec; LOS = D+			0.0 Sec; LOS = A+			4.1 Sec; LOS = A			6.5 Sec; LOS = A			B+

Signal Timing, Secs: Phase 1 = 0.0; Phase 2 = 0.0; Phase 3 = 0.0; Phase 4 = 72.1; Phase 5 = 0.0; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 0.0. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 0.0; Phase 3 = 0.0; Phase 4 = 0.0; Phase 5 = 72.1; Phase 6 = 72.1; Phase 7 = 72.1; Phase 8 = 72.1.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 1. Stanfield Cutoff (NS) and North Shore (EW)
Time Period: PM Peak Hour Lanes: Existing

Traffic Condition: 2025 Average Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 34 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	0	166	63	0	0	0	76	83	0	46	0	191	625
(2) Number of Lanes, N	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	7.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	66	175	0	0	0	0	80	87	0	249	0	0	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	1900	1900	0	1900	1900	0	1900	1900	0	1900	0	0	
(30) Flow Ratio, v/s = [(28)/(29)].	0.03	0.09	0.00	0.00	0.00	0.00	0.04	0.05	0.00	0.13	0.00	0.00	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.00	0.13	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.17	0.00	0.00	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	.303
Critical Lane Group = XXXX		XXXX								XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.00	0.44	0.00	0.00	0.00	0.00	0.56	0.56	0.00	0.56	0.00	0.00	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	0.0	43.5	0.0	0.0	0.0	0.0	56.5	56.5	0.0	56.5	0.0	0.0	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed ÷ 7 Seconds]	16	0	0	16	0	0	19	0	0	19	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	0	751	0	0	0	0	997	997	0	997	0	0	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.00	0.23	0.00	0.00	0.00	0.00	0.08	0.09	0.00	0.25	0.00	0.00	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	50.0	18.9	0.0	50.0	50.0	0.0	10.2	10.2	0.0	12.0	0.0	0.0	17.22
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	100	56	0	100	100	0	44	44	0	44	0	0	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.8	2.7	0.0	0.0	0.0	0.0	1.0	1.1	0.0	3.0	0.0	0.0	1.21
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	D-	B-	A+	D-	D-	A+	B+	B+	A+	B+	A+	A+	B-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	27.5 Sec; LOS = C			0.0 Sec; LOS = A+			10.2 Sec; LOS = B+			12.0 Sec; LOS = B+			B-

Signal Timing, Secs: Phase 1 = 0.0; Phase 2 = 0.0; Phase 3 = 0.0; Phase 4 = 56.5; Phase 5 = 0.0; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 0.0. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 0.0; Phase 3 = 0.0; Phase 4 = 0.0; Phase 5 = 56.5; Phase 6 = 56.5; Phase 7 = 56.5; Phase 8 = 56.5.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 1. Stanfield Cutoff (NS) and North Shore (EW)
Time Period: AM Peak Hour Lanes: Existing

Traffic Condition: 2025 Average Month With Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 26 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	0	66	71	0	0	0	24	112	0	56	0	386	715
(2) Number of Lanes, N	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	7.00
(3) Right Turns (FREE=Free Right Turn Lane; ARROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	75	69	0	0	0	0	25	118	0	465	0	0	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	1900	1900	0	1900	1900	0	1900	1900	0	1900	0	0	
(30) Flow Ratio, v/s = [(28)/(29)].	0.04	0.04	0.00	0.00	0.00	0.00	0.01	0.06	0.00	0.24	0.00	0.00	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.00	0.11	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.28	0.00	0.00	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	.394
Critical Lane Group = XXXX		XXXX								XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.00	0.28	0.00	0.00	0.00	0.00	0.72	0.72	0.00	0.72	0.00	0.00	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	0.0	27.9	0.0	0.0	0.0	0.0	72.1	72.1	0.0	72.1	0.0	0.0	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	16	0	0	16	0	0	19	0	0	19	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	0	453	0	0	0	0	1295	1295	0	1295	0	0	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.00	0.15	0.00	0.00	0.00	0.00	0.02	0.09	0.00	0.36	0.00	0.00	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	50.0	28.3	0.0	50.0	50.0	0.0	4.0	4.4	0.0	6.5	0.0	0.0	12.42
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	100	72	0	100	100	0	28	28	0	28	0	0	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	2.1	1.4	0.0	0.0	0.0	0.0	0.2	0.9	0.0	3.6	0.0	0.0	0.56
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	D-	C	A+	D-	D-	A+	A	A	A+	A	A+	A+	B+
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	39.6 Sec; LOS = D+			0.0 Sec; LOS = A+			4.3 Sec; LOS = A			6.5 Sec; LOS = A			B+

Signal Timing, Secs: Phase 1 = 0.0; Phase 2 = 0.0; Phase 3 = 0.0; Phase 4 = 72.1; Phase 5 = 0.0; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 0.0. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 0.0; Phase 3 = 0.0; Phase 4 = 0.0; Phase 5 = 72.1; Phase 6 = 72.1; Phase 7 = 72.1; Phase 8 = 72.1.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 1. Stanfield Cutoff (NS) and North Shore (EW)
Time Period: PM Peak Hour Lanes: Existing

Traffic Condition: 2025 Average Month With Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 34 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	0	166	108	0	0	0	76	108	0	46	0	191	695
(2) Number of Lanes, N	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	7.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	114	175	0	0	0	0	80	114	0	249	0	0	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	1900	1900	0	1900	1900	0	1900	1900	0	1900	0	0	
(30) Flow Ratio, v/s = [(28)/(29)].	0.06	0.09	0.00	0.00	0.00	0.00	0.04	0.06	0.00	0.13	0.00	0.00	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.00	0.13	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.17	0.00	0.00	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	.303
Critical Lane Group = XXXX		XXXX								XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.00	0.44	0.00	0.00	0.00	0.00	0.56	0.56	0.00	0.56	0.00	0.00	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	0.0	43.5	0.0	0.0	0.0	0.0	56.5	56.5	0.0	56.5	0.0	0.0	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	16	0	0	16	0	0	19	0	0	19	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	0	751	0	0	0	0	997	997	0	997	0	0	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.00	0.23	0.00	0.00	0.00	0.00	0.08	0.11	0.00	0.25	0.00	0.00	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	50.0	18.9	0.0	50.0	50.0	0.0	10.2	10.5	0.0	12.0	0.0	0.0	19.13
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	100	56	0	100	100	0	44	44	0	44	0	0	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	3.2	2.7	0.0	0.0	0.0	0.0	1.0	1.4	0.0	3.0	0.0	0.0	1.17
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	D-	B-	A+	D-	D-	A+	B+	B+	A+	B+	A+	A+	B-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	31.2 Sec; LOS = C-			0.0 Sec; LOS = A+			10.4 Sec; LOS = B+			12.0 Sec; LOS = B+			B-

Signal Timing, Secs: Phase 1 = 0.0; Phase 2 = 0.0; Phase 3 = 0.0; Phase 4 = 56.5; Phase 5 = 0.0; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 0.0. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 0.0; Phase 3 = 0.0; Phase 4 = 0.0; Phase 5 = 56.5; Phase 6 = 56.5; Phase 7 = 56.5; Phase 8 = 56.5.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: AM Peak Hour Lanes: Existing

Traffic Condition: 2025 Average Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 91 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	30	30	33	29	304	15	345	19	115	816	55	31	1822
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; ARROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	32	32	35	351	0	16	363	20	121	859	58	33	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	1900	1900	1800	1900	1900	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.03	0.03	0.02	0.18	0.00	0.01	0.19	0.01	0.07	0.45	0.03	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.22	0.00	0.11	0.23	0.11	0.11	0.49	0.11	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.22	0.00	0.00	0.00	0.00	0.11	0.49	0.00	0.00	.936
Critical Lane Group = XXXX			XXXX	XXXX					XXXX	XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.23	0.23	0.11	0.23	0.00	0.11	0.54	0.54	0.11	0.54	0.54	0.11	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	23.0	23.0	11.3	23.0	0.0	11.3	54.4	54.4	11.4	54.3	54.3	11.3	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed ÷ 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	181	181	131	362	0	131	957	957	132	956	956	131	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.17	0.17	0.26	0.97	0.00	0.12	0.38	0.02	0.91	0.90	0.06	0.25	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	34.3	34.3	48.4	91.1	0.0	42.9	15.0	10.6	121.7	39.5	11.0	47.7	48.44
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	77	77	89	77	0	89	46	46	89	46	46	89	
(41) Average Vehicle Queue Length at Beginning of Green [(28)/(2) * Cycle Length/3600 * (40)]	1.4	1.4	0.9	7.5	0.0	0.4	4.6	0.3	3.0	10.9	0.7	0.8	6.16
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO
(43) Level of Service (LOS) Based on (39) [See Note 4]	C-	C-	D-	F	A+	D	B	B+	F-	D+	B+	D	D-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	39.3 Sec; LOS = D+			89.0 Sec; LOS = F			40.4 Sec; LOS = D+			38.0 Sec; LOS = D+			D-

Signal Timing, Secs: Phase 1 = 11.3; Phase 2 = 0.1; Phase 3 = 0.0; Phase 4 = 54.3; Phase 5 = 11.3; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 23.0. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 11.3; Phase 3 = 11.4; Phase 4 = 11.4; Phase 5 = 65.7; Phase 6 = 77.0; Phase 7 = 77.0; Phase 8 = 77.0.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: PM Peak Hour Lanes: Existing
Traffic Condition: 2025 Average Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 128 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	22	57	48	27	221	26	1123	32	190	564	16	42	2368
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; ARROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	23	60	51	261	0	27	1182	34	200	594	17	44	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	1900	1900	1800	1900	1900	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.02	0.06	0.03	0.14	0.00	0.02	0.62	0.02	0.11	0.31	0.01	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.18	0.00	0.11	0.66	0.11	0.15	0.35	0.11	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.18	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.11	1.05
Critical Lane Group = XXXX			XXXX	XXXX			XXXX					XXXX	
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.17	0.17	0.09	0.16	0.00	0.09	0.66	0.66	0.14	0.61	0.61	0.09	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	16.6	16.6	9.0	16.3	0.0	8.7	65.7	65.7	14.1	60.6	60.6	8.9	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	120	120	91	234	0	85	1173	1173	182	1075	1075	89	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.19	0.50	0.56	1.12	0.00	0.32	1.01	0.03	1.10	0.55	0.02	0.50	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	41.7	60.2	78.3	151.6	0.0	58.3	52.6	6.1	157.7	15.0	7.9	72.1	62.55
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	83	83	91	84	0	91	34	34	86	39	39	91	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.1	2.8	1.3	6.1	0.0	0.7	11.3	0.3	4.8	6.5	0.2	1.1	7.47
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	NO	YES	YES	NO	YES	NO	YES	YES	YES	NO
(43) Level of Service (LOS) Based on (39) [See Note 4]	D	E+	E-	F-	A+	E+	D-	A	F-	B	A-	E-	E+
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	63.9 Sec; LOS = E			142.7 Sec; LOS = F-			66.4 Sec; LOS = E			18.7 Sec; LOS = B-			E+

Signal Timing, Secs: Phase 1 = 8.9; Phase 2 = 5.1; Phase 3 = 0.0; Phase 4 = 60.6; Phase 5 = 8.7; Phase 6 = 0.3; Phase 7 = 0.0; Phase 8 = 16.3. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 8.9; Phase 3 = 14.1; Phase 4 = 14.1; Phase 5 = 74.7; Phase 6 = 83.4; Phase 7 = 83.7; Phase 8 = 83.7.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: AM Peak Hour Lanes: Existing

Traffic Condition: 2025 Average Month With Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 88 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	30	30	33	29	320	38	345	19	120	816	63	31	1874
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	32	32	35	367	0	40	363	20	126	859	66	33	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	1900	1900	1800	1900	1900	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.03	0.03	0.02	0.19	0.00	0.02	0.19	0.01	0.07	0.45	0.03	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.23	0.00	0.11	0.23	0.11	0.11	0.49	0.11	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.23	0.00	0.00	0.00	0.00	0.11	0.49	0.00	0.00	.945
Critical Lane Group = XXXX			XXXX	XXXX					XXXX	XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.24	0.24	0.11	0.24	0.00	0.11	0.54	0.54	0.11	0.54	0.54	0.11	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	23.8	23.8	11.2	23.8	0.0	11.2	53.8	53.8	11.3	53.7	53.7	11.2	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed ÷ 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	8	8	5	78	78	57	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	188	188	130	375	0	130	947	947	131	945	945	130	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.17	0.17	0.27	0.98	0.00	0.31	0.38	0.02	0.96	0.91	0.07	0.25	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	33.4	33.4	48.7	91.8	0.0	50.6	15.3	10.8	134.2	41.5	11.4	48.0	50.81
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	76	76	89	76	0	89	46	46	89	46	46	89	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.3	1.3	0.9	7.8	0.0	1.0	4.7	0.3	3.1	11.0	0.9	0.8	6.10
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES	YES	YES	NO
(43) Level of Service (LOS) Based on (39) [See Note 4]	C-	C-	D-	F	A+	D-	B	B+	F-	D+	B+	D	D-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	38.8 Sec; LOS = D+			87.8 Sec; LOS = F			44.6 Sec; LOS = D			39.6 Sec; LOS = D+			D-

Signal Timing, Secs: Phase 1 = 11.2; Phase 2 = 0.1; Phase 3 = 0.0; Phase 4 = 53.7; Phase 5 = 11.2; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 23.8. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 11.2; Phase 3 = 11.3; Phase 4 = 11.3; Phase 5 = 65.0; Phase 6 = 76.2; Phase 7 = 76.2; Phase 8 = 76.2.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: PM Peak Hour Lanes: Existing
Traffic Condition: 2025 Average Month With Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 127 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	22	57	48	27	231	41	1123	32	208	564	43	42	2438
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	23	60	51	272	0	43	1182	34	219	594	45	44	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	1900	1900	1800	1900	1900	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.02	0.06	0.03	0.14	0.00	0.02	0.62	0.02	0.12	0.31	0.02	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.18	0.00	0.11	0.66	0.11	0.16	0.35	0.11	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.18	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.11	1.06
Critical Lane Group = XXXX			XXXX	XXXX			XXXX					XXXX	
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.17	0.17	0.09	0.16	0.00	0.09	0.66	0.66	0.15	0.59	0.59	0.09	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	16.5	16.5	9.0	16.4	0.0	8.9	65.6	65.6	15.1	59.4	59.4	9.0	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	119	119	91	236	0	89	1170	1170	200	1053	1053	89	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.19	0.50	0.56	1.15	0.00	0.48	1.01	0.03	1.09	0.56	0.04	0.49	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	41.8	60.7	78.1	162.3	0.0	70.9	53.4	6.1	150.9	15.9	8.6	71.9	64.33
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	83	83	91	84	0	91	34	34	85	41	41	91	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.1	2.8	1.3	6.3	0.0	1.1	11.3	0.3	5.2	6.7	0.5	1.1	7.42
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	NO	YES	YES	NO	YES	NO	YES	YES	YES	NO
(43) Level of Service (LOS) Based on (39) [See Note 4]	D	E+	E-	F-	A+	E	D-	A	F-	B	A-	E-	E
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	64.0 Sec; LOS = E			149.8 Sec; LOS = F-			67.2 Sec; LOS = E			19.1 Sec; LOS = B-			E

Signal Timing, Secs: Phase 1 = 9.0; Phase 2 = 6.2; Phase 3 = 0.0; Phase 4 = 59.4; Phase 5 = 8.9; Phase 6 = 0.1; Phase 7 = 0.0; Phase 8 = 16.4. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 9.0; Phase 3 = 15.1; Phase 4 = 15.1; Phase 5 = 74.5; Phase 6 = 83.5; Phase 7 = 83.6; Phase 8 = 83.6.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: AM Peak Hour Lanes: Restriped

Traffic Condition: 2025 Average Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 76 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	30	30	33	29	304	15	345	19	115	816	55	31	1822
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	2.00	0.00	1.00	2.00	0.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	32	32	35	351	0	16	383	0	121	917	0	33	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	3800	0	1800	3800	0	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.03	0.03	0.02	0.18	0.00	0.01	0.10	0.00	0.07	0.24	0.00	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.22	0.00	0.11	0.14	0.00	0.11	0.28	0.00	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.22	0.00	0.00	0.00	0.00	0.11	0.28	0.00	0.00	.725
Critical Lane Group = XXXX			XXXX	XXXX					XXXX	XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.28	0.28	0.14	0.28	0.00	0.13	0.45	0.00	0.14	0.45	0.00	0.14	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	27.6	27.6	13.5	27.6	0.0	13.5	45.4	0.0	13.7	45.2	0.0	13.5	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed ÷ 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	224	224	171	448	0	171	1574	0	175	1567	0	171	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.14	0.14	0.20	0.78	0.00	0.09	0.24	0.00	0.69	0.59	0.00	0.19	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	29.4	29.4	42.7	53.1	0.0	39.6	17.3	0.0	72.0	23.0	0.0	42.4	31.50
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	72	72	86	72	0	87	55	0	86	55	0	86	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.3	1.3	0.8	7.1	0.0	0.4	2.9	0.0	2.9	7.0	0.0	0.8	4.04
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	C	C	D	D-	A+	D+	B-	A+	E-	C+	A+	D	C-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	34.2 Sec; LOS = C-			52.5 Sec; LOS = D-			30.5 Sec; LOS = C-			23.7 Sec; LOS = C+			C-

Signal Timing, Secs: Phase 1 = 13.5; Phase 2 = 0.2; Phase 3 = 0.0; Phase 4 = 45.2; Phase 5 = 13.5; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 27.6. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 13.5; Phase 3 = 13.7; Phase 4 = 13.7; Phase 5 = 58.9; Phase 6 = 72.4; Phase 7 = 72.4; Phase 8 = 72.4.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: PM Peak Hour Lanes: Restriped

Traffic Condition: 2025 Average Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 106 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	22	57	48	27	221	26	1123	32	190	564	16	42	2368
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	2.00	0.00	1.00	2.00	0.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; ARROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	23	60	51	261	0	27	1216	0	200	611	0	44	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	3800	0	1800	3800	0	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.02	0.06	0.03	0.14	0.00	0.02	0.32	0.00	0.11	0.16	0.00	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.18	0.00	0.11	0.36	0.00	0.15	0.20	0.00	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.18	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.11	.757
Critical Lane Group = XXXX			XXXX	XXXX			XXXX					XXXX	
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.20	0.20	0.13	0.20	0.00	0.12	0.55	0.00	0.19	0.48	0.00	0.13	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	20.1	20.1	12.7	19.7	0.0	12.4	55.0	0.0	19.2	48.4	0.0	12.6	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed ÷ 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	152	152	156	299	0	151	1937	0	273	1688	0	155	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.15	0.39	0.32	0.87	0.00	0.18	0.63	0.00	0.73	0.36	0.00	0.29	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	36.4	46.6	48.5	78.5	0.0	43.5	18.0	0.0	62.5	17.1	0.0	47.0	29.95
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	80	80	87	80	0	88	45	0	81	52	0	87	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.0	2.7	1.2	5.8	0.0	0.7	7.6	0.0	4.5	4.4	0.0	1.1	5.20
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	D+	D	D-	E-	A+	D	B-	A+	E+	B-	A+	D	C
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	45.5 Sec; LOS = D			75.2 Sec; LOS = E-			24.3 Sec; LOS = C+			19.1 Sec; LOS = B-			C

Signal Timing, Secs: Phase 1 = 12.6; Phase 2 = 6.6; Phase 3 = 0.0; Phase 4 = 48.4; Phase 5 = 12.4; Phase 6 = 0.3; Phase 7 = 0.0; Phase 8 = 19.7. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 12.6; Phase 3 = 19.2; Phase 4 = 19.2; Phase 5 = 67.6; Phase 6 = 79.9; Phase 7 = 80.3; Phase 8 = 80.3.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: AM Peak Hour Lanes: Restriped

Traffic Condition: 2025 Average Month With Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 72 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	30	30	33	29	320	38	345	19	120	816	63	31	1874
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	2.00	0.00	1.00	2.00	0.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	32	32	35	367	0	40	383	0	126	925	0	33	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	3800	0	1800	3800	0	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.03	0.03	0.02	0.19	0.00	0.02	0.10	0.00	0.07	0.24	0.00	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.23	0.00	0.11	0.14	0.00	0.11	0.28	0.00	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.23	0.00	0.00	0.00	0.00	0.11	0.28	0.00	0.00	.737
Critical Lane Group = XXXX			XXXX	XXXX					XXXX	XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.29	0.29	0.14	0.29	0.00	0.14	0.44	0.00	0.15	0.43	0.00	0.14	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	28.8	28.8	13.8	28.9	0.0	13.9	43.5	0.0	14.7	42.6	0.0	13.8	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	8	8	5	78	78	57	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	236	236	177	473	0	177	1501	0	192	1468	0	176	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.13	0.13	0.20	0.78	0.00	0.23	0.26	0.00	0.66	0.63	0.00	0.19	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	28.2	28.2	42.2	50.8	0.0	43.0	18.6	0.0	65.5	25.8	0.0	41.9	32.60
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	71	71	86	71	0	86	56	0	85	57	0	86	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.2	1.2	0.8	7.3	0.0	1.0	3.0	0.0	3.0	7.4	0.0	0.8	4.15
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	C	C	D	D-	A+	D	B-	A+	E	C	A+	D	C-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	33.2 Sec; LOS = C-			50.0 Sec; LOS = D-			30.2 Sec; LOS = C-			26.4 Sec; LOS = C			C-

Signal Timing, Secs: Phase 1 = 13.8; Phase 2 = 0.9; Phase 3 = 0.0; Phase 4 = 42.6; Phase 5 = 13.8; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 28.8. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 13.8; Phase 3 = 14.7; Phase 4 = 14.7; Phase 5 = 57.3; Phase 6 = 71.1; Phase 7 = 71.1; Phase 8 = 71.2.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: PM Peak Hour Lanes: Restriped

Traffic Condition: 2025 Average Month With Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 103 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	22	57	48	27	231	41	1123	32	208	564	43	42	2438
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	2.00	0.00	1.00	2.00	0.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	23	60	51	272	0	43	1216	0	219	639	0	44	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	3800	0	1800	3800	0	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.02	0.06	0.03	0.14	0.00	0.02	0.32	0.00	0.12	0.17	0.00	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.18	0.00	0.11	0.36	0.00	0.16	0.21	0.00	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.18	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.11	.762
Critical Lane Group = XXXX			XXXX	XXXX			XXXX					XXXX	
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.20	0.20	0.13	0.20	0.00	0.13	0.55	0.00	0.20	0.47	0.00	0.13	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	20.4	20.4	12.6	20.3	0.0	12.5	54.5	0.0	20.4	46.6	0.0	12.6	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	156	156	155	310	0	154	1920	0	296	1620	0	154	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.15	0.39	0.33	0.88	0.00	0.28	0.63	0.00	0.74	0.39	0.00	0.29	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	35.9	45.7	48.6	78.1	0.0	46.9	18.4	0.0	60.7	18.6	0.0	47.1	30.74
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	80	80	87	80	0	87	45	0	80	53	0	87	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.0	2.7	1.2	6.0	0.0	1.0	7.7	0.0	4.8	4.7	0.0	1.1	5.24
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
(43) Level of Service (LOS) Based on (39) [See Note 4]	D+	D	D-	E-	A+	D	B-	A+	E+	B-	A+	D	C-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	45.1 Sec; LOS = D			73.8 Sec; LOS = E-			24.8 Sec; LOS = C+			20.5 Sec; LOS = C+			C-

Signal Timing, Secs: Phase 1 = 12.6; Phase 2 = 7.9; Phase 3 = 0.0; Phase 4 = 46.6; Phase 5 = 12.5; Phase 6 = 0.1; Phase 7 = 0.0; Phase 8 = 20.3. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 12.6; Phase 3 = 20.4; Phase 4 = 20.4; Phase 5 = 67.1; Phase 6 = 79.6; Phase 7 = 79.7; Phase 8 = 79.7.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: AM Peak Hour Lanes: Existing

Traffic Condition: 2025 Peak Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 89 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	37	37	42	36	380	19	431	23	144	1020	68	39	2276
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	39	39	44	438	0	20	454	24	152	1074	72	41	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	1900	1900	1800	1900	1900	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.04	0.04	0.02	0.23	0.00	0.01	0.24	0.01	0.08	0.57	0.04	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.27	0.00	0.11	0.28	0.11	0.12	0.61	0.11	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.27	0.00	0.00	0.00	0.00	0.12	0.61	0.00	0.00	1.10
Critical Lane Group = XXXX			XXXX	XXXX					XXXX	XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.23	0.23	0.10	0.23	0.00	0.10	0.58	0.58	0.11	0.56	0.56	0.10	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	23.4	23.4	9.5	23.4	0.0	9.5	57.5	57.5	10.8	56.2	56.2	9.5	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed ÷ 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	184	184	99	369	0	99	1017	1017	123	992	992	99	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.21	0.21	0.44	1.19	0.00	0.20	0.45	0.02	1.23	1.08	0.07	0.41	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	35.0	35.0	64.4	157.9	0.0	49.0	14.4	9.2	223.5	82.4	10.2	61.9	86.87
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	77	77	90	77	0	90	42	42	89	44	44	90	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.7	1.7	1.1	9.3	0.0	0.5	5.4	0.3	3.8	13.1	0.9	1.0	7.37
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	NO	YES	YES	YES	YES	NO	NO	YES	YES	NO
(43) Level of Service (LOS) Based on (39) [See Note 4]	D+	D+	E	F-	A+	D-	B	A-	F-	F+	B+	E+	F+
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	45.7 Sec; LOS = D			153.1 Sec; LOS = F-			64.6 Sec; LOS = E			77.4 Sec; LOS = E-			F+

Signal Timing, Secs: Phase 1 = 9.5; Phase 2 = 1.3; Phase 3 = 0.0; Phase 4 = 56.2; Phase 5 = 9.5; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 23.4. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 9.5; Phase 3 = 10.8; Phase 4 = 10.8; Phase 5 = 67.1; Phase 6 = 76.6; Phase 7 = 76.6; Phase 8 = 76.6.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: PM Peak Hour Lanes: Existing

Traffic Condition: 2025 Peak Month Without Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 128 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	28	71	60	34	276	33	1404	40	237	705	20	53	2961
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	29	75	63	326	0	35	1478	42	249	742	21	56	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	1900	1900	1800	1900	1900	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.03	0.08	0.04	0.17	0.00	0.02	0.78	0.02	0.14	0.39	0.01	0.03	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.12	0.12	0.11	0.21	0.00	0.11	0.82	0.11	0.18	0.43	0.11	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.21	0.00	0.00	0.82	0.00	0.00	0.00	0.00	0.11	1.24
Critical Lane Group = XXXX			XXXX	XXXX			XXXX					XXXX	
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.17	0.17	0.08	0.16	0.00	0.07	0.68	0.68	0.14	0.62	0.62	0.08	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	16.6	16.6	7.8	16.3	0.0	7.5	68.2	68.2	14.1	61.8	61.8	7.7	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed + 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	120	120	68	234	0	63	1220	1220	182	1098	1098	66	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.25	0.62	0.93	1.39	0.00	0.56	1.21	0.03	1.37	0.68	0.02	0.84	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	44.0	72.4	165.7	255.1	0.0	92.0	123.2	5.3	254.9	17.9	7.4	143.4	119.03
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	83	83	92	84	0	93	32	32	86	38	38	92	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.4	3.5	1.6	7.6	0.0	0.9	13.1	0.4	5.9	7.9	0.2	1.4	8.80
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	NO	YES	YES	NO	YES	NO	YES	YES	YES	NO
(43) Level of Service (LOS) Based on (39) [See Note 4]	D	E-	F-	F-	A+	F	F-	A	F-	B-	A-	F-	F-
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	102.6 Sec; LOS = F-			239.4 Sec; LOS = F-			139.0 Sec; LOS = F-			26.2 Sec; LOS = C			F-

Signal Timing, Secs: Phase 1 = 7.7; Phase 2 = 6.4; Phase 3 = 0.0; Phase 4 = 61.8; Phase 5 = 7.5; Phase 6 = 0.3; Phase 7 = 0.0; Phase 8 = 16.3. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 7.7; Phase 3 = 14.1; Phase 4 = 14.1; Phase 5 = 75.9; Phase 6 = 83.4; Phase 7 = 83.7; Phase 8 = 83.7.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left

INTERSECTION DELAY CALCULATION USING 1997 HIGHWAY CAPACITY MANUAL PROCEDURE

Intersection: 2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)
Time Period: AM Peak Hour Lanes: Existing

Traffic Condition: 2025 Peak Month With Project
Cycle Length: 100 Seconds (Maximum Cycle Length Needed to Satisfy Pedestrians When Present: 87 Seconds)

Descriptor	NT	NR	NL	ST	SR	SL	ET	ER	EL	WT	WR	WL	Total
INPUT DATA													
(1) Volume per Hour, V	37	37	42	36	396	42	431	23	149	1020	76	39	2328
(2) Number of Lanes, N	0.50	0.50	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.00
(3) Right Turns (FREE=Free Right Turn Lane; AROW=Right Turn Arrow) [See Note 5]													
(4) Lost Time (Yellow, All Red, Etc) in Seconds, Y (Typically 2 to 4 Seconds) [See Note 9]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
(5) Peak Hour Factor, PHF (1.00 for Peak Hour; 0.90 or 0.95 for Peak 15 Minutes)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
(6) Lane Width (8; 9; 10; 11; 12 [Factor = 1.00]; 13; 14; 15; or 16 for 15+)	12	12	12	12	12	12	12	12	12	12	12	12	
(7) Percent Heavy Vehicles (0; 2; 4; 6; 8; 10; 15; 20; 25; or 30; Typically 4 or 6)	0	0	0	0	0	0	0	0	0	0	0	0	
(8) Grade (-6; -4; -2; 0; +2; +4; or +6)	0	0	0	0	0	0	0	0	0	0	0	0	
(9) Parking Maneuvers per Hour (-1 = No Parking [Factor = 1.00]; 0; 10; 20; 30; or 40)	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
(10) Buses Stopping per Hour (0; 10; 20; 30; or 40)	0	0	0	0	0	0	0	0	0	0	0	0	
(11) CBD/Other (0=CBD; 1=Other)	1	1	1	1	1	1	1	1	1	1	1	1	
(12) Right Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/ Shared Lane)	0	0	0	0	0	0	0	0	0	0	0	0	
(13) Pedestrians per Hour Conflicting with Right Turns (0; 50; 100; 200; 300; 400; or 500)	0	0	0	0	0	0	0	0	0	0	0	0	
(14) Left Turn Lane Type (0=Standard [Factor=1.00]; 1=Unprotected; 2=Protected w/Separate Arrow)	0	0	0	0	0	0	0	0	0	0	0	0	
(15) Saturated Flow Rate per Hour of Green Time (HCM Recommends 1900)	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	
(16) Signal Progression (1=PreTimed/Factor=1.0; 2=Actuated/Factor=0.85; 3=Actuated & Progressed)	1	1	1	1	1	1	1	1	1	1	1	1	
(17) Minimum Green Time in Seconds (Usually 7 to 10 seconds)	7	7	7	7	7	7	7	7	7	7	7	7	
FACTORS FROM TABLES													
(18) Lane Utilization Factor [Table 9-4]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(19) Lane Width Factor [Table 9-5]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(20) Heavy Vehicles Factor [Table 9-6]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(21) Grade Factor [Table 9-7]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(22) Parking Maneuvers Factor [Table 9-8]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(23) Busses Stopping Fcator [Table 9-9]	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(24) CBD/Other Factor [Table 9-10]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(25) Right Turn Lane Factor [Table 9-11]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(26) Left Turn Lane factor [Table 9-12]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27) Progression Adjustment Factor [Table 9-13]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(27a) Progression k Value [Table 9-14]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
CALCULATED VALUES AND PERFORMANCE MEASURES													
(28) Adjusted Flow Rate (in Peak 15 Minutes) in Vehicles per Hour, v = [(1)*(18)/(5)]	39	39	44	455	0	44	454	24	157	1074	80	41	
(29) Adjusted Saturation Flow Rate in Vehicles per Hour of Green, s = [See Note 1]	950	950	1800	1900	0	1800	1900	1900	1800	1900	1900	1800	
(30) Flow Ratio, v/s = [(28)/(29)].	0.04	0.04	0.02	0.24	0.00	0.02	0.24	0.01	0.09	0.57	0.04	0.02	
(31) Minimum Green Plus Lost Time as Proportion of Cycle [See Note 7]	0.11	0.11	0.11	0.28	0.00	0.11	0.28	0.11	0.13	0.61	0.11	0.11	
(32) Critical Lane Group = [(31)'s That Are Critical]. Total is ICU. [See Note 10]	0.00	0.00	0.11	0.28	0.00	0.00	0.00	0.00	0.13	0.61	0.00	0.00	1.12
Critical Lane Group = XXXX			XXXX	XXXX					XXXX	XXXX			
(33) Green Time Allocated as Proportion of Cycle, g/C=[See Note 2]. Sum of Critical Moves = 1.00	0.24	0.24	0.09	0.24	0.00	0.09	0.57	0.57	0.11	0.56	0.56	0.09	
(34) Green Time Allocated in Seconds, [(33) * Cycle Length]	24.0	24.0	9.4	24.0	0.0	9.4	57.1	57.1	11.0	55.6	55.6	9.4	
(35) Minimum Ped Time Needed to Cross Street [3 Seconds per Lane Crossed ÷ 7 Seconds]	21	0	0	21	0	0	15	0	0	15	0	0	
(36) Signal Phases Available to Movement. 1 = Phase 1; 13 = Phases 1 and 3. [See Note 6]	68	68	56	8	8	5	24	24	12	4	4	1	
(37) Capacity in Vehicles per Hour (includes Yellow Penalty adjustment), c=[((33)-(4)/C)*(29)]	190	190	98	379	0	98	1010	1010	126	980	980	98	
(38) Volume to Capacity Ratio, v/c = X = [(28)/(37)]	0.21	0.21	0.45	1.20	0.00	0.45	0.45	0.02	1.25	1.10	0.08	0.42	
(39) Average Delay per Vehicle in Seconds, d [See Note 3]	34.3	34.3	65.3	161.2	0.0	65.3	14.7	9.4	227.3	87.5	10.6	62.7	90.44
(40) Percent of Vehicles That Have to Stop [1.00 -(33)]	76	76	91	76	0	91	43	43	89	44	44	91	
(41) Average Vehicle Queue Length at Beginning of Green, [(28)/(2) * Cycle Length/3600 * (40)]	1.6	1.6	1.1	9.6	0.0	1.1	5.4	0.3	3.9	13.2	1.0	1.0	7.34
(42) Do All Vehicles Clear? [YES if (38) < 0.95] [See Note 8]	YES	YES	YES	NO	YES	YES	YES	YES	NO	NO	YES	YES	NO
(43) Level of Service (LOS) Based on (39) [See Note 4]	C-	C-	E	F-	A+	E	B	A-	F-	F+	B+	E+	F
(44) Leg Average Delay per Vehicle in Seconds - Level of Service, LOS	45.6 Sec; LOS = D			152.7 Sec; LOS = F-			67.0 Sec; LOS = E			81.5 Sec; LOS = F+			F

Signal Timing, Secs: Phase 1 = 9.4; Phase 2 = 1.5; Phase 3 = 0.0; Phase 4 = 55.6; Phase 5 = 9.4; Phase 6 = 0.0; Phase 7 = 0.0; Phase 8 = 24.0. If time = 0.0, Phase is skipped.
Signal Offsets, Secs: Phase 1 = 0.0; Phase 2 = 9.4; Phase 3 = 11.0; Phase 4 = 11.0; Phase 5 = 66.6; Phase 6 = 76.0; Phase 7 = 76.0; Phase 8 = 76.0.
See Notes on last page. NT = Northbound Through, NR = Northbound Right, NL = Northbound Left, ST = Southbound Through, ... , WL = Westbound Left