PALOMAR ENERGY PROJECT

ATTACHMENT 63-1

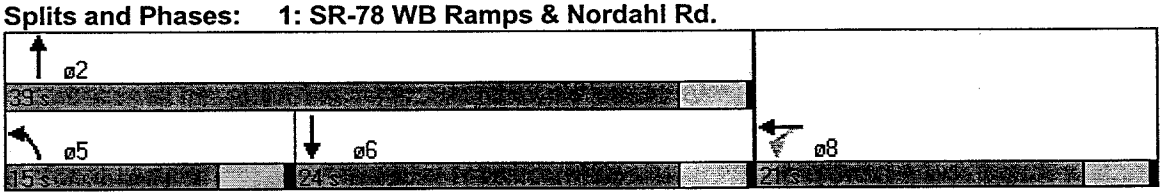
AM AND PM PEAK HOUR LEVEL OF SERVICE CALCULATIONS

Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.97	0.95	1.00	1.00	0.95	0.95
Frt Protected					0.944						0.925	
Flt Protected				0.950	0.970		0.950					
Satd. Flow (prot)	0	0	0	1681	1620	0	3433	3539	0	0	3274	0
Frt Perm.					0.944						0.925	
Flt Perm.				0.950	0.970		0.950					
Satd. Flow (perm)	0	0	0	1681	1620	0	3433	3539	0	0	3274	0
Satd. Flow (RTOR)					50						*460	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	503	0	116	437	253	0	0	491	489
Lane Group Flow (vph)	0	0	0	340	348	0	486	281	0	0	1089	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Total Split (s)	0.0	0.0	0.0	21.0	21.0	0.0	15.0	39.0	0.0	0.0	24.0	0.0
Lane Grp Cap (vph)				453	473		675	2229			1538	
v/s Ratio Prot							0.14	0.08			0.27	
v/s Ratio Perm				0.20	0.20							
Critical LG?				Yes			Yes				Yes	
Act Effct Green (s)				16.2	16.2		11.8	37.8			23.0	
Actuated g/C Ratio				0.27	0.27		0.20	0.63			0.38	
v/c Ratio				0.75	0.74		0.72	0.13			0.71	
Uniform Delay, d1				20.0	16.9		22.5	4.5			8.5	
Platoon Factor				0.92	0.92		0.93	1.14			1.11	
Incr. Delay, d2				6.9	5.9		3.3	0.1			2.8	
Webster Delay				25.3	21.4		24.2	5.2			12.2	
Webster LOS				C	C		C	A			B	

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 9
Sum of Critical v/s Ratios: 0.62
Intersection v/c Ratio: 0.73
Intersection Webster Signal Delay: 16.7
Intersection LOS: B
* User Entered Value

Splits and Phases: 1: SR-78 WB Ramps & Nordahl Rd.

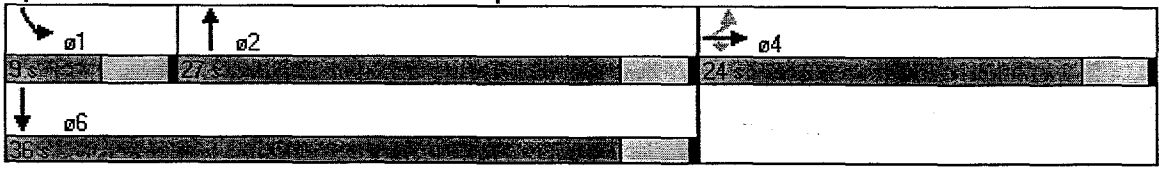


Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00
Frt Protected		0.850	0.850					0.930				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1681	1441	1504	0	0	0	0	3291	0	3433	3539	0
Frt Perm.		0.850	0.850					0.930				
Flt Perm.	0.950									0.950		
Satd. Flow (perm)	1681	1441	1504	0	0	0	0	3291	0	3433	3539	0
Satd. Flow (RTOR)		115	115					435				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	128	0	597	0	0	0	0	544	470	153	841	0
Adj. Flow (vph)	142	0	663	0	0	0	0	604	522	170	934	0
Lane Group Flow (vph)	142	325	338	0	0	0	0	1126	0	170	934	0
Turn Type	Perm		Perm							Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	24.0	24.0	24.0	0.0	0.0	0.0	0.0	27.0	0.0	9.0	36.0	0.0
Lane Grp Cap (vph)	439	461	478					1877		286	2259	
v/s Ratio Prot		0.18						0.30		0.05	0.26	
v/s Ratio Perm	0.08		0.18									
Critical LG?			Yes					Yes		Yes		
Act Effct Green (s)	15.7	15.7	15.7					30.3		5.0	38.3	
Actuated g/C Ratio	0.26	0.26	0.26					0.51		0.08	0.64	
v/c Ratio	0.32	0.70	0.71					0.60		0.59	0.41	
Uniform Delay, d1	17.8	12.5	12.8					5.9		26.5	5.3	
Platoon Factor	0.77	0.77	0.78					1.10		1.07	0.55	
Incr. Delay, d2	0.4	4.9	4.7					1.4		2.3	0.4	
Webster Delay	14.2	14.6	14.7					8.0		30.6	3.3	
Webster LOS	B	B	B					A		C	A	

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 9
Sum of Critical v/s Ratios: 0.54
Intersection v/c Ratio: 0.64
Intersection Webster Signal Delay: 9.6
Intersection LOS: A

Splits and Phases: 2: SR-78 EB Ramps & Nordahl Rd.

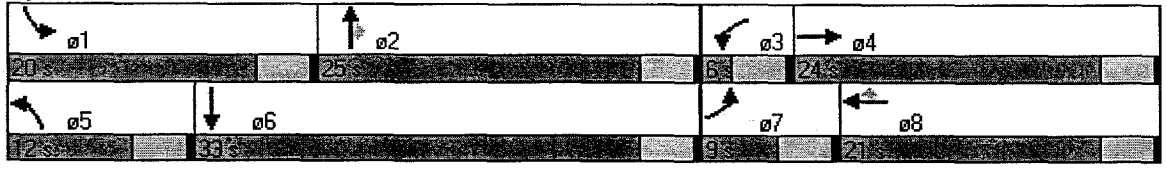


Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt Protected		0.922				0.850			0.850		0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3263	0	3433	3539	1583	1770	3539	1583	3433	3440	0
Frt Perm.		0.922				0.850			0.850		0.972	
Flt Perm.	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3263	0	3433	3539	1583	1770	3539	1583	3433	3440	0
Satd. Flow (RTOR)		270				283			63		45	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	252	345	376	90	356	255	182	507	57	416	829	193
Adj. Flow (vph)	280	383	418	100	396	283	202	563	63	462	921	214
Lane Group Flow (vph)	280	801	0	100	396	283	202	563	63	462	1135	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Total Split (s)	9.0	24.0	0.0	6.0	21.0	21.0	12.0	25.0	25.0	20.0	33.0	0.0
Lane Grp Cap (vph)	311	1056		119	769	565	212	1203	579	695	1479	
v/s Ratio Prot	0.08	0.20		0.03	0.11		0.11	0.16		0.13	0.32	
v/s Ratio Perm						0.11			0.04			
Critical LG?	Yes	Yes					Yes			Yes	Yes	
Act Effct Green (s)	6.8	19.7		2.6	16.3	16.3	9.0	25.5	25.5	15.2	31.7	
Actuated g/C Ratio	0.09	0.26		0.03	0.22	0.22	0.12	0.34	0.34	0.20	0.42	
v/c Ratio	0.90	0.76		0.84	0.51	0.50	0.95	0.47	0.11	0.66	0.77	
Uniform Delay, d1	33.7	16.4		36.0	25.8	0.0	32.8	19.4	0.0	27.5	17.7	
Platoon Factor	1.02	0.95		0.99	0.94	1.00	1.00	1.05	1.00	0.94	1.02	
Incr. Delay, d2	27.3	3.2		38.5	0.6	0.7	48.2	1.3	0.4	2.4	3.9	
Webster Delay	61.8	18.8		74.1	24.9	0.7	81.0	21.8	0.4	28.3	22.0	
Webster LOS	E	B		E	C	A	F	C	A	C	C	

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 6
Sum of Critical v/s Ratios: 0.71
Intersection v/c Ratio: 0.78
Intersection Webster Signal Delay: 27.2
Intersection LOS: C

Splits and Phases: 3: Mission Rd. & Nordahl Rd.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	109	33	55	635	1165	128
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (veh/h)	115	35	58	668	1226	135
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
vC, conflicting volume	1744	681	1361			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	91	88			
cM capacity (veh/h)	69	393	501			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	115	35	58	334	334	818	544
Volume Left	115	0	58	0	0	0	0
Volume Right	0	35	0	0	0	0	135
cSH	69	393	501	1700	1700	1700	1700
Volume to Capacity	1.67	0.09	0.12	0.20	0.20	0.48	0.32
Queue Length (ft)	251	7	10	0	0	0	0
Control Delay (s)	458.4	15.0	13.1	0.0	0.0	0.0	0.0
Lane LOS	F	C	B				
Approach Delay (s)	355.3		1.0			0.0	
Approach LOS	F						

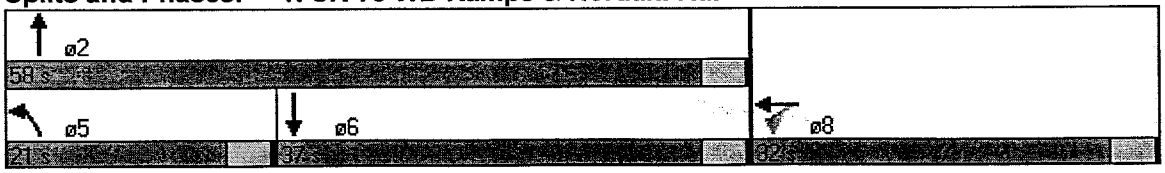
Intersection Summary			
Average Delay	24.1		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A

Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.97	0.95	1.00	1.00	0.95	0.95
Frt Protected					0.850						0.923	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1681	1504	0	3433	3539	0	0	3267	0
Frt Perm.					0.850						0.923	
Flt Perm.				0.950			0.950					
Satd. Flow (perm)	0	0	0	1681	1504	0	3433	3539	0	0	3267	0
Satd. Flow (RTOR)					202						*368	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	353	0	500	558	708	0	0	602	634
Lane Group Flow (vph)	0	0	0	392	556	0	620	787	0	0	1373	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Total Split (s)	0.0	0.0	0.0	32.0	32.0	0.0	21.0	58.0	0.0	0.0	37.0	0.0
Lane Grp Cap (vph)				508	595		686	2233			1521	
v/s Ratio Prot					0.28		0.18	0.22			0.36	
v/s Ratio Perm				0.23								
Critical LG?					Yes		Yes				Yes	
Act Effct Green (s)				27.2	27.2		18.0	56.8			35.8	
Actuated g/C Ratio				0.30	0.30		0.20	0.63			0.40	
v/c Ratio				0.77	0.93		0.90	0.35			0.90	
Uniform Delay, d1				28.5	19.1		35.1	7.9			18.3	
Platoon Factor				0.94	0.94		0.92	1.63			1.07	
Incr. Delay, d2				7.1	22.0		8.3	0.2			9.1	
Webster Delay				34.1	40.0		40.6	13.0			28.6	
Webster LOS				C	D		D	B			C	

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 9
Sum of Critical v/s Ratios: 0.83
Intersection v/c Ratio: 0.92
Intersection Webster Signal Delay: 29.6
Intersection LOS: C
* User Entered Value

Splits and Phases: 1: SR-78 WB Ramps & Nordahl Rd.

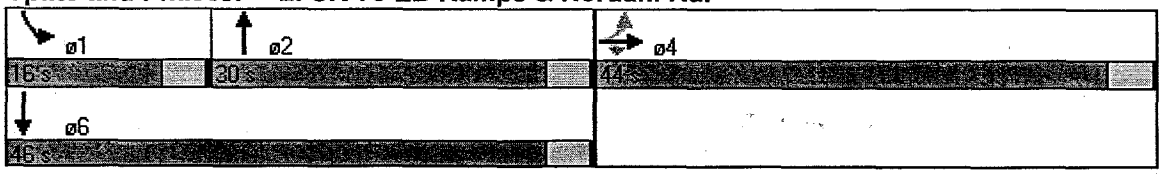


Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00
Frt Protected		0.883	0.850					0.936				
Flt Protected	0.950	0.989								0.950		
Satd. Flow (prot)	1681	1480	1504	0	0	0	0	3313	0	3433	3539	0
Frt Perm.		0.883	0.850					0.936				
Flt Perm.	0.950	0.989								0.950		
Satd. Flow (perm)	1681	1480	1504	0	0	0	0	3313	0	3433	3539	0
Satd. Flow (RTOR)		183	*210					211				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	262	0	398	0	0	0	0	1004	742	426	529	0
Lane Group Flow (vph)	239	235	259	0	0	0	0	1940	0	473	588	0
Turn Type	Perm		Perm							Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	44.0	44.0	44.0	0.0	0.0	0.0	0.0	30.0	0.0	16.0	46.0	0.0
Lane Grp Cap (vph)	339	445	471					1927		495	2587	
v/s Ratio Prot								0.56		0.14	0.17	
v/s Ratio Perm	0.14	0.11	0.11									
Critical LG?	Yes							Yes		Yes		
Act Effct Green (s)	18.2	18.2	18.2					49.8		13.0	65.8	
Actuated g/C Ratio	0.20	0.20	0.20					0.55		0.14	0.73	
v/c Ratio	0.71	0.53	0.55					1.01		0.96	0.23	
Uniform Delay, d1	33.4	6.6	5.6					17.9		38.2	3.9	
Platoon Factor	0.47	0.47	0.47					1.00		0.96	0.72	
Incr. Delay, d2	6.5	1.1	1.3					22.1		19.1	0.1	
Webster Delay	22.1	4.2	3.9					39.9		55.9	2.9	
Webster LOS	C	A	A					D		E	A	

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 9
Sum of Critical v/s Ratios: 0.84
Intersection v/c Ratio: 0.93
Intersection Webster Signal Delay: 30.2
Intersection LOS: C
* User Entered Value

Splits and Phases: 2: SR-78 EB Ramps & Nordahl Rd.

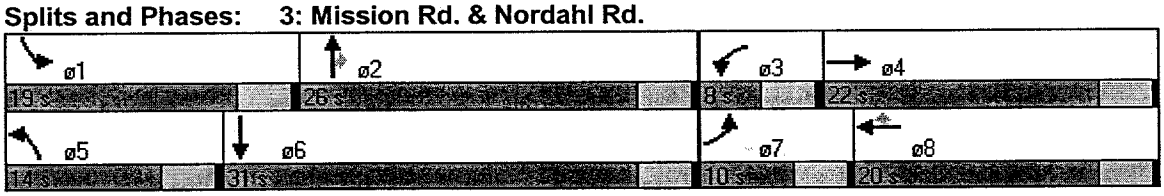


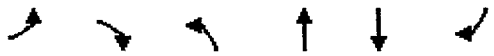
Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt Protected		0.922				0.850			0.850		0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3263	0	3433	3539	1583	1770	3539	1583	3433	3440	0
Frt Perm.		0.922				0.850			0.850		0.972	
Flt Perm.	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3263	0	3433	3539	1583	1770	3539	1583	3433	3440	0
Satd. Flow (RTOR)		322				283			63		43	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	252	345	376	90	356	255	182	507	57	416	829	193
Adj. Flow (vph)	280	383	418	100	396	283	202	563	63	462	921	214
Lane Group Flow (vph)	280	801	0	100	396	283	202	563	63	462	1135	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Total Split (s)	10.0	22.0	0.0	8.0	20.0	20.0	14.0	26.0	26.0	19.0	31.0	0.0
Lane Grp Cap (vph)	357	1059		192	754	560	259	1184	571	682	1361	
v/s Ratio Prot	0.08	0.19		0.03	0.11		0.11	0.16		0.13	0.32	
v/s Ratio Perm						0.11			0.04			
Critical LG?	Yes	Yes					Yes			Yes	Yes	
Act Effct Green (s)	7.8	18.8		4.2	16.0	16.0	11.0	25.1	25.1	14.9	29.1	
Actuated g/C Ratio	0.10	0.25		0.06	0.21	0.21	0.15	0.33	0.33	0.20	0.39	
v/c Ratio	0.78	0.76		0.52	0.53	0.51	0.78	0.48	0.11	0.68	0.83	
Uniform Delay, d1	32.8	15.0		34.4	26.1	0.0	30.8	19.7	0.0	27.8	19.9	
Platoon Factor	1.02	0.99		0.98	0.97	1.00	1.00	1.09	1.00	0.96	1.05	
Incr. Delay, d2	10.8	3.1		2.5	0.7	0.7	13.8	1.4	0.4	2.7	6.1	
Webster Delay	44.3	18.0		36.2	25.9	0.7	44.6	22.8	0.4	29.5	27.0	
Webster LOS	D	B		D	C	A	D	C	A	C	C	

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 6
Sum of Critical v/s Ratios: 0.71
Intersection v/c Ratio: 0.78
Intersection Webster Signal Delay: 25.0
Intersection LOS: C

Splits and Phases: 3: Mission Rd. & Nordahl Rd.





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	169	44	47	1000	585	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (veh/h)	178	46	49	1053	616	128
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
vC, conflicting volume	1305	372	744			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	93	94			
cM capacity (veh/h)	143	625	859			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	178	46	49	526	526	411	334
Volume Left	178	0	49	0	0	0	0
Volume Right	0	46	0	0	0	0	128
cSH	143	625	859	1700	1700	1700	1700
Volume to Capacity	1.24	0.07	0.06	0.31	0.31	0.24	0.20
Queue Length (ft)	266	6	5	0	0	0	0
Control Delay (s)	216.3	11.2	9.4	0.0	0.0	0.0	0.0
Lane LOS	F	B	A				
Approach Delay (s)	173.9		0.4			0.0	
Approach LOS	F						

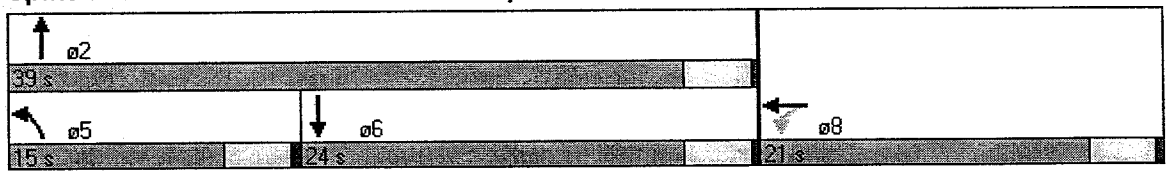
Intersection Summary			
Average Delay	19.1		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A

Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.97	0.95	1.00	1.00	0.95	0.95
Frt Protected					0.945						0.930	
Flt Protected				0.950	0.969		0.950					
Satd. Flow (prot)	0	0	0	1681	1620	0	3433	3539	0	0	3291	0
Frt Perm.					0.945						0.930	
Flt Perm.				0.950	0.969		0.950					
Satd. Flow (perm)	0	0	0	1681	1620	0	3433	3539	0	0	3291	0
Satd. Flow (RTOR)					50						404	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	508	0	116	502	253	0	0	561	489
Adj. Flow (vph)	0	0	0	564	0	129	558	281	0	0	623	543
Lane Group Flow (vph)	0	0	0	342	351	0	558	281	0	0	1166	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Total Split (s)	0.0	0.0	0.0	21.0	21.0	0.0	15.0	39.0	0.0	0.0	24.0	0.0
Lane Grp Cap (vph)				453	473		686	2229			1501	
v/s Ratio Prot							0.16	0.08			0.30	
v/s Ratio Perm				0.20	0.20							
Critical LG?				Yes			Yes				Yes	
Act Effct Green (s)				16.2	16.2		12.0	37.8			22.8	
Actuated g/C Ratio				0.27	0.27		0.20	0.63			0.38	
v/c Ratio				0.75	0.74		0.81	0.13			0.78	
Uniform Delay, d1				20.0	16.9		22.9	4.5			10.2	
Platoon Factor				0.92	0.92		0.89	0.91			1.10	
Incr. Delay, d2				7.0	6.2		6.6	0.1			4.0	
Webster Delay				25.5	21.8		26.9	4.2			15.2	
Webster LOS				C	C		C	A			B	

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 9
Sum of Critical v/s Ratios: 0.67
Intersection v/c Ratio: 0.78
Intersection Webster Signal Delay: 18.6
Intersection LOS: B

Splits and Phases: 1: SR-78 WB Ramps & Nordahl Rd.

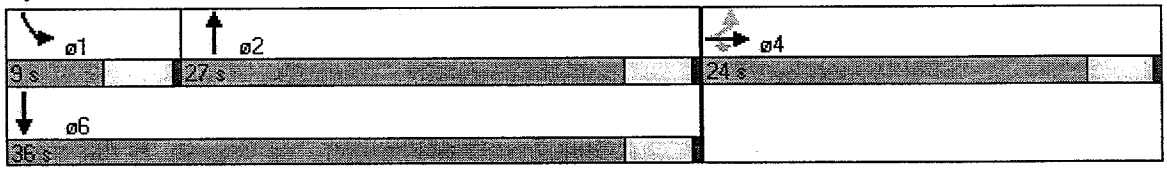


Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00
Frt Protected		0.850	0.850					0.930				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1681	1441	1504	0	0	0	0	3291	0	3433	3539	0
Frt Perm.		0.850	0.850					0.930				
Flt Perm.	0.950									0.950		
Satd. Flow (perm)	1681	1441	1504	0	0	0	0	3291	0	3433	3539	0
Satd. Flow (RTOR)		78	78					435				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	128	0	667	0	0	0	0	544	470	153	981	0
Adj. Flow (vph)	142	0	741	0	0	0	0	604	522	170	1090	0
Lane Group Flow (vph)	142	363	378	0	0	0	0	1126	0	170	1090	0
Turn Type	Perm		Perm							Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	24.0	24.0	24.0	0.0	0.0	0.0	0.0	27.0	0.0	9.0	36.0	0.0
Lane Grp Cap (vph)	493	477	496					1786		286	2146	
v/s Ratio Prot		0.22						0.30		0.05	0.31	
v/s Ratio Perm	0.08		0.22									
Critical LG?			Yes					Yes		Yes		
Act Effct Green (s)	17.6	17.6	17.6					28.4		5.0	36.4	
Actuated g/C Ratio	0.29	0.29	0.29					0.47		0.08	0.61	
v/c Ratio	0.29	0.76	0.76					0.63		0.59	0.51	
Uniform Delay, d1	16.4	14.9	15.0					6.7		26.5	6.7	
Platoon Factor	0.84	0.85	0.85					1.22		1.06	0.74	
Incr. Delay, d2	0.3	7.0	6.8					1.7		2.4	0.6	
Webster Delay	14.1	19.6	19.5					9.9		30.5	5.6	
Webster LOS	B	B	B					A		C	A	

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 9
Sum of Critical v/s Ratios: 0.58
Intersection v/c Ratio: 0.68
Intersection Webster Signal Delay: 11.9
Intersection LOS: B

Splits and Phases: 2: SR-78 EB Ramps & Nordahl Rd.

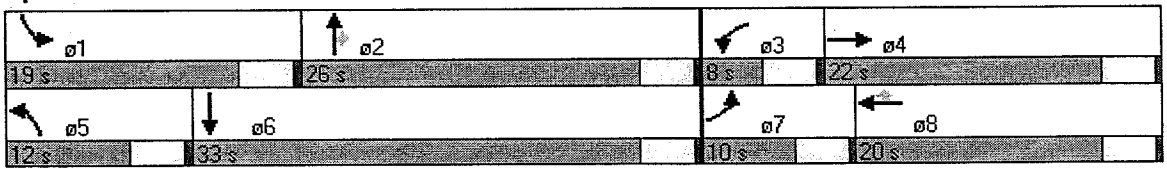


Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt Protected		0.917				0.850			0.850		0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3245	0	3433	3539	1583	1770	3539	1583	3433	3458	0
Frt Perm.		0.917				0.850			0.850		0.977	
Flt Perm.	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3245	0	3433	3539	1583	1770	3539	1583	3433	3458	0
Satd. Flow (RTOR)		250				283			63		34	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	252	345	429	107	356	255	182	507	57	416	1039	193
Adj. Flow (vph)	280	383	477	119	396	283	202	563	63	462	1154	214
Lane Group Flow (vph)	280	860	0	119	396	283	202	563	63	462	1368	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Total Split (s)	10.0	22.0	0.0	8.0	20.0	20.0	12.0	26.0	26.0	19.0	33.0	0.0
Lane Grp Cap (vph)	357	1020		192	778	569	212	1160	561	682	1426	
v/s Ratio Prot	0.08	0.22		0.03	0.11		0.11	0.16		0.13	0.39	
v/s Ratio Perm						0.11			0.04			
Critical LG?	Yes	Yes					Yes			Yes	Yes	
Act Effct Green (s)	7.8	19.3		4.2	16.5	16.5	9.0	24.6	24.6	14.9	30.5	
Actuated g/C Ratio	0.10	0.26		0.06	0.22	0.22	0.12	0.33	0.33	0.20	0.41	
v/c Ratio	0.78	0.84		0.62	0.51	0.50	0.95	0.49	0.11	0.68	0.96	
Uniform Delay, d1	32.8	18.4		34.6	25.7	0.0	32.8	20.1	0.0	27.8	21.1	
Platoon Factor	1.02	1.01		0.98	0.98	1.00	1.00	1.06	1.00	0.96	1.02	
Incr. Delay, d2	10.8	6.5		5.9	0.5	0.7	48.2	1.5	0.4	2.7	15.9	
Webster Delay	44.3	25.1		39.7	25.8	0.7	81.0	22.9	0.4	29.5	37.5	
Webster LOS	D	C		D	C	A	F	C	A	C	D	

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 6
Sum of Critical v/s Ratios: 0.80
Intersection v/c Ratio: 0.87
Intersection Webster Signal Delay: 31.2
Intersection LOS: C

Splits and Phases: 3: Mission Rd. & Nordahl Rd.

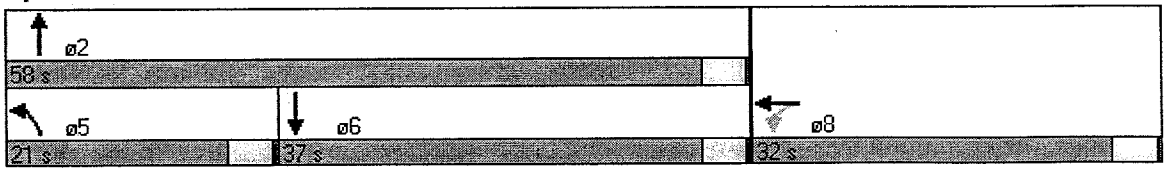


Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.97	0.95	1.00	1.00	0.95	0.95
Frt Protected					0.850						0.923	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1681	1504	0	3433	3539	0	0	3267	0
Frt Perm.					0.850						0.923	
Flt Perm.				0.950			0.950					
Satd. Flow (perm)	0	0	0	1681	1504	0	3433	3539	0	0	3267	0
Satd. Flow (RTOR)					170						340	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	353	0	500	628	778	0	0	602	634
Adj. Flow (vph)	0	0	0	392	0	556	698	864	0	0	669	704
Lane Group Flow (vph)	0	0	0	392	556	0	698	864	0	0	1373	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Total Split (s)	0.0	0.0	0.0	32.0	32.0	0.0	21.0	58.0	0.0	0.0	37.0	0.0
Lane Grp Cap (vph)				521	583		686	2205			1481	
v/s Ratio Prot					0.30		0.20	0.24			0.36	
v/s Ratio Perm				0.23								
Critical LG?					Yes		Yes				Yes	
Act Effct Green (s)				27.9	27.9		18.0	56.1			35.1	
Actuated g/C Ratio				0.31	0.31		0.20	0.62			0.39	
v/c Ratio				0.75	0.95		1.02	0.39			0.93	
Uniform Delay, d1				27.9	20.9		36.0	8.4			19.5	
Platoon Factor				0.97	0.97		0.83	1.40			1.04	
Incr. Delay, d2				6.1	26.0		24.7	0.2			11.5	
Webster Delay				33.0	46.2		54.5	12.0			31.7	
Webster LOS				C	D		D	B			C	

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 9
Sum of Critical v/s Ratios: 0.87
Intersection v/c Ratio: 0.96
Intersection Webster Signal Delay: 33.6
Intersection LOS: C

Splits and Phases: 1: SR-78 WB Ramps & Nordahl Rd.

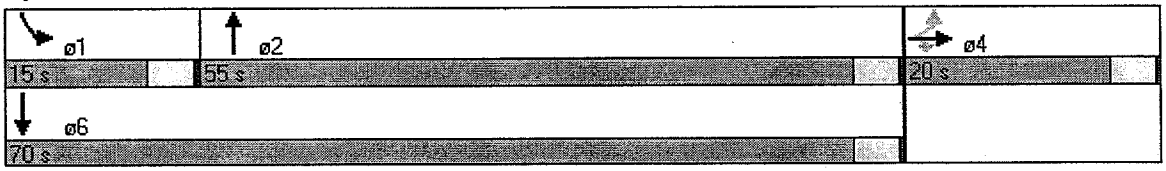


Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00
Frt Protected		0.938	0.850					0.938				
Flt Protected	0.950	0.972								0.950		
Satd. Flow (prot)	1681	1545	1504	0	0	0	0	3320	0	3433	3539	0
Frt Perm.		0.938	0.850					0.938				
Flt Perm.	0.950	0.972								0.950		
Satd. Flow (perm)	1681	1545	1504	0	0	0	0	3320	0	3433	3539	0
Satd. Flow (RTOR)		35	366					336				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	262	0	398	0	0	0	0	1144	812	426	529	0
Adj. Flow (vph)	291	0	442	0	0	0	0	1271	902	473	588	0
Lane Group Flow (vph)	184	183	366	0	0	0	0	2173	0	473	588	0
Turn Type	Perm		Perm							Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	20.0	20.0	20.0	0.0	0.0	0.0	0.0	55.0	0.0	15.0	70.0	0.0
Lane Grp Cap (vph)	278	284	554					2129		457	2717	
v/s Ratio Prot								0.61		0.14	0.17	
v/s Ratio Perm	0.11	0.11	0.11									
Critical LG?			Yes					Yes		Yes		
Act Effct Green (s)	14.9	14.9	14.9					54.1		12.0	69.1	
Actuated g/C Ratio	0.17	0.17	0.17					0.60		0.13	0.77	
v/c Ratio	0.66	0.64	0.66					1.02		1.04	0.22	
Uniform Delay, d1	35.2	28.1	0.0					15.1		39.0	2.9	
Platoon Factor	0.94	0.95	1.00					1.05		0.77	1.75	
Incr. Delay, d2	5.8	4.9	3.0					24.9		39.0	0.1	
Webster Delay	39.0	31.5	3.0					40.8		69.1	5.2	
Webster LOS	D	C	A					D		E	A	

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 9
Sum of Critical v/s Ratios: 0.87
Intersection v/c Ratio: 0.97
Intersection Webster Signal Delay: 34.9
Intersection LOS: C

Splits and Phases: 2: SR-78 EB Ramps & Nordahl Rd.

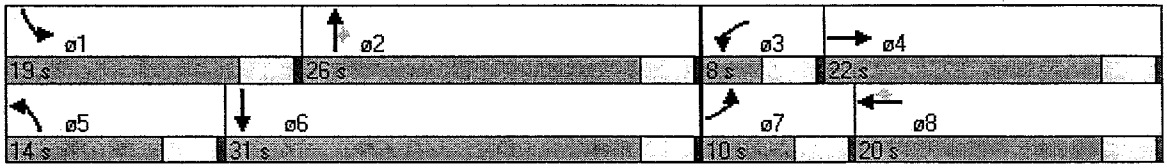


Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt Protected		0.922				0.850			0.850		0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3263	0	3433	3539	1583	1770	3539	1583	3433	3440	0
Frt Perm.		0.922				0.850			0.850		0.972	
Flt Perm.	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3263	0	3433	3539	1583	1770	3539	1583	3433	3440	0
Satd. Flow (RTOR)		321				283			82		43	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	252	345	376	90	356	255	235	717	74	416	829	193
Adj. Flow (vph)	280	383	418	100	396	283	261	797	82	462	921	214
Lane Group Flow (vph)	280	801	0	100	396	283	261	797	82	462	1135	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Total Split (s)	10.0	22.0	0.0	8.0	20.0	20.0	14.0	26.0	26.0	19.0	31.0	0.0
Lane Grp Cap (vph)	357	1058		192	754	560	261	1184	584	682	1356	
v/s Ratio Prot	0.08	0.19		0.03	0.11		0.15	0.23		0.13	0.32	
v/s Ratio Perm						0.11			0.05			
Critical LG?	Yes	Yes					Yes			Yes	Yes	
Act Effct Green (s)	7.8	18.8		4.2	16.0	16.0	11.1	25.1	25.1	14.9	29.0	
Actuated g/C Ratio	0.10	0.25		0.06	0.21	0.21	0.15	0.33	0.33	0.20	0.39	
v/c Ratio	0.78	0.76		0.52	0.53	0.51	1.00	0.67	0.14	0.68	0.84	
Uniform Delay, d1	32.8	15.1		34.4	26.1	0.0	31.9	21.4	0.0	27.8	20.0	
Platoon Factor	1.02	0.99		0.98	0.97	1.00	1.00	1.09	1.00	0.96	1.04	
Incr. Delay, d2	10.8	3.1		2.5	0.7	0.7	55.7	3.1	0.5	2.7	6.3	
Webster Delay	44.3	18.1		36.2	25.9	0.7	87.7	26.3	0.5	29.5	27.1	
Webster LOS	D	B		D	C	A	F	C	A	C	C	

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Total Lost Time: 6
Sum of Critical v/s Ratios: 0.75
Intersection v/c Ratio: 0.81
Intersection Webster Signal Delay: 28.1
Intersection LOS: C

Splits and Phases: 3: Mission Rd. & Nordahl Rd.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	109	33	55	635	1425	128
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (veh/h)	115	35	58	668	1500	135
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
vC, conflicting volume	2017	817	1635			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	89	85			
cM capacity (veh/h)	43	319	393			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	115	35	58	334	334	1000	635
Volume Left	115	0	58	0	0	0	0
Volume Right	0	35	0	0	0	0	135
cSH	43	319	393	1700	1700	1700	1700
Volume to Capacity	2.65	0.11	0.15	0.20	0.20	0.59	0.37
Queue Length (ft)	310	9	13	0	0	0	0
Control Delay (s)	947.8	17.6	15.7	0.0	0.0	0.0	0.0
Lane LOS	F	C	C				
Approach Delay (s)	731.6		1.3			0.0	
Approach LOS	F						

Intersection Summary			
Average Delay	43.9		
Intersection Capacity Utilization	58.8%	ICU Level of Service	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	169	44	47	1260	585	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (veh/h)	178	46	49	1326	616	128
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
vC, conflicting volume	1442	372	744			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	93	94			
cM capacity (veh/h)	116	625	859			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	178	46	49	663	663	411	334
Volume Left	178	0	49	0	0	0	0
Volume Right	0	46	0	0	0	0	128
cSH	116	625	859	1700	1700	1700	1700
Volume to Capacity	1.53	0.07	0.06	0.39	0.39	0.24	0.20
Queue Length (ft)	322	6	5	0	0	0	0
Control Delay (s)	344.8	11.2	9.4	0.0	0.0	0.0	0.0
Lane LOS	F	B	A				
Approach Delay (s)	275.9		0.3			0.0	
Approach LOS	F						

Intersection Summary			
Average Delay	26.6		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	109	33	55	635	1185	128
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (veh/h)	115	35	58	668	1247	135
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
vC, conflicting volume	1765	691	1382			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	91	88			
cM capacity (veh/h)	66	387	492			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	115	35	58	334	334	832	551
Volume Left	115	0	58	0	0	0	0
Volume Right	0	35	0	0	0	0	135
cSH	66	387	492	1700	1700	1700	1700
Volume to Capacity	1.73	0.09	0.12	0.20	0.20	0.49	0.32
Queue Length (ft)	256	7	10	0	0	0	0
Control Delay (s)	487.4	15.2	13.3	0.0	0.0	0.0	0.0
Lane LOS	F	C	B				
Approach Delay (s)	377.7		1.1			0.0	
Approach LOS	F						

Intersection Summary			
Average Delay	25.3		
Intersection Capacity Utilization	51.8%	ICU Level of Service	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	169	44	47	1020	585	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (veh/h)	178	46	49	1074	616	128
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
vC, conflicting volume	1316	372	744			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	93	94			
cM capacity (veh/h)	141	625	859			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	178	46	49	537	537	411	334
Volume Left	178	0	49	0	0	0	0
Volume Right	0	46	0	0	0	0	128
cSH	141	625	859	1700	1700	1700	1700
Volume to Capacity	1.26	0.07	0.06	0.32	0.32	0.24	0.20
Queue Length (ft)	271	6	5	0	0	0	0
Control Delay (s)	224.8	11.2	9.4	0.0	0.0	0.0	0.0
Lane LOS	F	B	A				
Approach Delay (s)	180.7		0.4			0.0	
Approach LOS	F						

Intersection Summary			
Average Delay	19.6		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A