

INTERSECTION LEVEL OF SERVICE ANALYSIS SUMMARY TABLE

REDWOOD DRIVE AT MISSION INN AVENUE

Intersection		AM Peak Hour		PM Peak Hour	
Redwood Dr (N/S) at Mission Inn Ave (E/W)		LOS	Delay	LOS	Delay
- Existing Conditions (Traffic Signal)		B	16.8	D	37.9
- Alternative Options :					
1	Construct EB &WB Left Turn Lanes With 2 Thru Lanes & RESTRICT PARKING on one side	B	18.7	C	34.8
2	Convert EB & WB inner thru lane into left turn only lane	D	36.1	F	181.6
3	Modify EB & WB Signal Operations to Split Phase	D	36.5	F	115.1
4	Add EB & WB "NO LEFT TURN" Restrictions 3-9PM	B	16.8	C	32.9

LOS = Level of Service

Acceptable LOS is "D" or better

LOS "F" = Traffic congestion and extensive intersection delays

Lanes, Volumes, Timings Existing Conditions - AM Peak Hour Report

5:

09/29/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	347	459	10	301	7	275	12	1	3	39	18
Future Volume (vph)	9	347	459	10	301	7	275	12	1	3	39	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	12	12	12	14	12
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.915			0.995			0.997			0.941	
Flt Protected		0.999			0.998		0.950	0.958			0.994	
Satd. Flow (prot)	0	3127	0	0	3397	0	1681	1690	0	0	1858	0
Flt Permitted		0.949			0.900		0.950	0.958			0.994	
Satd. Flow (perm)	0	2971	0	0	3064	0	1681	1690	0	0	1858	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		364			4			1			44	
Link Speed (mph)		35			35			40			25	
Link Distance (ft)		345			537			169			487	
Travel Time (s)		6.7			10.5			2.9			13.3	
Peak Hour Factor	0.75	0.85	0.83	0.62	0.90	0.58	0.78	0.60	0.25	0.25	0.81	0.38
Adj. Flow (vph)	12	408	553	16	334	12	353	20	4	12	48	47
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	0	973	0	0	362	0	187	190	0	0	107	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		33.3%	33.3%		33.3%	33.3%	
Yellow Time (s)	4.1	4.1		4.1	4.1		4.4	4.4		3.6	3.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.1			5.1		5.4	5.4			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)		22.7			22.7		12.8	12.8			7.8	
Actuated g/C Ratio		0.39			0.39		0.22	0.22			0.13	
v/c Ratio		0.71			0.31		0.51	0.52			0.38	
Control Delay		13.5			14.5		26.2	26.2			21.1	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		13.5			14.5		26.2	26.2			21.1	
LOS		B			B		C	C			C	
Approach Delay		13.5			14.5			26.2			21.1	
Approach LOS		B			B			C			C	

Lanes, Volumes, Timings

5:

09/29/2022

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 58.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 16.8

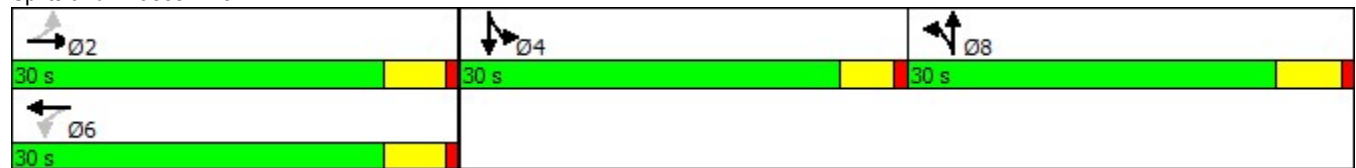
Intersection LOS: B

Intersection Capacity Utilization 54.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5:



Lanes, Volumes, Timings Existing Conditions - PM Peak Hour Report

5:

09/29/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	851	676	7	436	8	463	25	2	4	55	30
Future Volume (vph)	34	851	676	7	436	8	463	25	2	4	55	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	12	12	12	14	12
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.933			0.995			0.998			0.952	
Flt Protected		0.999			0.999		0.950	0.957			0.996	
Satd. Flow (prot)	0	3189	0	0	3401	0	1681	1690	0	0	1884	0
Flt Permitted		0.922			0.859		0.950	0.957			0.996	
Satd. Flow (perm)	0	2943	0	0	2924	0	1681	1690	0	0	1884	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		223			3						19	
Link Speed (mph)		35			35			40			25	
Link Distance (ft)		345			537			169			487	
Travel Time (s)		6.7			10.5			2.9			13.3	
Peak Hour Factor	0.77	0.96	0.90	0.58	0.89	0.50	0.84	0.89	0.50	0.50	0.86	0.75
Adj. Flow (vph)	44	886	751	12	490	16	551	28	4	8	64	40
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	0	1681	0	0	518	0	292	291	0	0	112	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	70.0	70.0		70.0	70.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		23.1%	23.1%		23.1%	23.1%	
Yellow Time (s)	4.1	4.1		4.1	4.1		4.4	4.4		3.6	3.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.1			5.1		5.4	5.4			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)		65.0			65.0		23.6	23.6			11.1	
Actuated g/C Ratio		0.57			0.57		0.21	0.21			0.10	
v/c Ratio		0.95			0.31		0.85	0.84			0.57	
Control Delay		34.4			14.2		66.9	65.9			52.4	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		34.4			14.2		66.9	65.9			52.4	
LOS		C			B		E	E			D	
Approach Delay		34.4			14.2			66.4			52.4	
Approach LOS		C			B			E			D	

Lanes, Volumes, Timings

5:

09/29/2022

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 114.8

Natural Cycle: 130

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 37.9

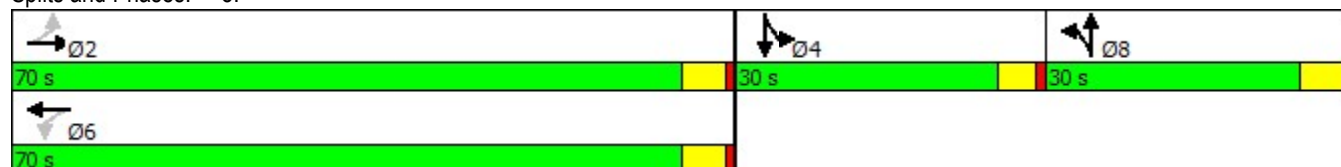
Intersection LOS: D

Intersection Capacity Utilization 91.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 5:



Lanes, Volumes, Timings Alternative Improvement Option 1 - AM Peak Hour Report

5:

10/12/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	347	459	10	301	7	275	12	1	3	39	18
Future Volume (vph)	9	347	459	10	301	7	275	12	1	3	39	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	8	10	10	10	12	12	12	12	14	12
Storage Length (ft)	100		50	100		50	0		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.914			0.995			0.997			0.941	
Flt Protected	0.950			0.950			0.950	0.958			0.994	
Satd. Flow (prot)	1652	3235	0	1652	3287	0	1681	1690	0	0	1858	0
Flt Permitted	0.950			0.950			0.950	0.958			0.994	
Satd. Flow (perm)	1652	3235	0	1652	3287	0	1681	1690	0	0	1858	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		329			3			1			38	
Link Speed (mph)		35			35			40			25	
Link Distance (ft)		345			537			169			487	
Travel Time (s)		6.7			10.5			2.9			13.3	
Peak Hour Factor	0.75	0.85	0.83	0.62	0.90	0.58	0.78	0.60	0.25	0.25	0.81	0.38
Adj. Flow (vph)	12	408	553	16	334	12	353	20	4	12	48	47
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	12	961	0	16	346	0	187	190	0	0	107	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	30.0		9.5	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	9.5	30.5		9.5	30.5		30.0	30.0		30.0	30.0	
Total Split (%)	9.5%	30.5%		9.5%	30.5%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	3.5	4.1		3.5	4.1		4.4	4.4		3.6	3.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	4.5	5.1		4.5	5.1		5.4	5.4			4.6	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Min		None	Min		Min	Min		Min	Min	
Act Effct Green (s)	5.2	23.2		5.2	23.2		13.2	13.2			8.2	
Actuated g/C Ratio	0.08	0.38		0.08	0.38		0.21	0.21			0.13	
v/c Ratio	0.09	0.68		0.11	0.28		0.52	0.52			0.38	
Control Delay	34.6	14.6		34.9	16.1		28.6	28.6			24.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	34.6	14.6		34.9	16.1		28.6	28.6			24.0	
LOS	C	B		C	B		C	C			C	
Approach Delay		14.9			17.0			28.6			24.0	
Approach LOS		B			B			C			C	

Lanes, Volumes, Timings

5:

10/12/2022

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 61.8

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 18.7

Intersection LOS: B

Intersection Capacity Utilization 47.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5:

 Ø1	 Ø2	 Ø4	 Ø8
9.5 s	30.5 s	30 s	30 s
 Ø5	 Ø6		
9.5 s	30.5 s		

Lanes, Volumes, Timings Alternative Improvement Option 1 - PM Peak Hour Report

5:

10/12/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	851	676	7	436	8	463	25	2	4	55	30
Future Volume (vph)	34	851	676	7	436	8	463	25	2	4	55	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	8	10	10	8	12	12	12	12	14	12
Storage Length (ft)	100		50	100		50	0		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.931			0.995			0.998			0.952	
Flt Protected	0.950			0.950			0.950	0.957			0.996	
Satd. Flow (prot)	1652	3295	0	1652	3287	0	1681	1690	0	0	1884	0
Flt Permitted	0.950			0.950			0.950	0.957			0.996	
Satd. Flow (perm)	1652	3295	0	1652	3287	0	1681	1690	0	0	1884	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		205			3						19	
Link Speed (mph)		35			35			40			25	
Link Distance (ft)		345			537			169			487	
Travel Time (s)		6.7			10.5			2.9			13.3	
Peak Hour Factor	0.77	0.96	0.90	0.58	0.89	0.50	0.84	0.89	0.50	0.50	0.86	0.75
Adj. Flow (vph)	44	886	751	12	490	16	551	28	4	8	64	40
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	44	1637	0	12	506	0	292	291	0	0	112	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	30.0		9.5	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	13.8	60.5		9.5	56.2		30.0	30.0		30.0	30.0	
Total Split (%)	10.6%	46.5%		7.3%	43.2%		23.1%	23.1%		23.1%	23.1%	
Yellow Time (s)	3.5	4.1		3.5	4.1		4.4	4.4		3.6	3.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	4.5	5.1		4.5	5.1		5.4	5.4			4.6	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Min		None	Min		Min	Min		Min	Min	
Act Effct Green (s)	7.8	55.7		5.0	47.3		23.1	23.1			10.8	
Actuated g/C Ratio	0.07	0.52		0.05	0.44		0.22	0.22			0.10	
v/c Ratio	0.36	0.90		0.15	0.35		0.80	0.80			0.54	
Control Delay	57.9	29.0		57.0	21.8		57.9	57.2			48.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	57.9	29.0		57.0	21.8		57.9	57.2			48.3	
LOS	E	C		E	C		E	E			D	
Approach Delay		29.8			22.7			57.6			48.3	
Approach LOS		C			C			E			D	

Lanes, Volumes, Timings

5:

10/12/2022

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 106.5

Natural Cycle: 130

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 34.8

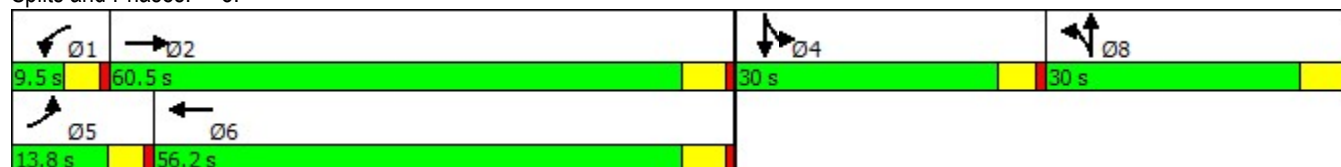
Intersection LOS: C

Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5:



Lanes, Volumes, Timings Alternative Improvement Option 2 - AM Peak Hour Report

5:

10/04/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	347	459	10	301	7	275	12	1	3	39	18
Future Volume (vph)	9	347	459	10	301	7	275	12	1	3	39	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	12	12	12	14	12
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.914			0.995			0.997			0.941	
Flt Protected	0.950			0.950			0.950	0.958			0.994	
Satd. Flow (prot)	1711	1646	0	1711	1792	0	1681	1690	0	0	1858	0
Flt Permitted	0.514			0.124			0.950	0.958			0.994	
Satd. Flow (perm)	926	1646	0	223	1792	0	1681	1690	0	0	1858	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		75			2			1			25	
Link Speed (mph)		35			35			40			25	
Link Distance (ft)		345			537			169			487	
Travel Time (s)		6.7			10.5			2.9			13.3	
Peak Hour Factor	0.75	0.85	0.83	0.62	0.90	0.58	0.78	0.60	0.25	0.25	0.81	0.38
Adj. Flow (vph)	12	408	553	16	334	12	353	20	4	12	48	47
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	12	961	0	16	346	0	187	190	0	0	107	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	80.0	80.0		80.0	80.0		30.0	30.0		30.0	30.0	
Total Split (%)	57.1%	57.1%		57.1%	57.1%		21.4%	21.4%		21.4%	21.4%	
Yellow Time (s)	4.1	4.1		4.1	4.1		4.4	4.4		3.6	3.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.1	5.1		5.1	5.1		5.4	5.4			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)	75.2	75.2		75.2	75.2		18.2	18.2			10.7	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.15	0.15			0.09	
v/c Ratio	0.02	0.90		0.11	0.31		0.73	0.74			0.56	
Control Delay	10.9	32.1		13.9	12.1		65.8	65.7			52.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	10.9	32.1		13.9	12.1		65.8	65.7			52.1	
LOS	B	C		B	B		E	E			D	
Approach Delay		31.8			12.2			65.7			52.1	
Approach LOS		C			B			E			D	

Lanes, Volumes, Timings

5:

10/04/2022

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 119.3

Natural Cycle: 140

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 36.1

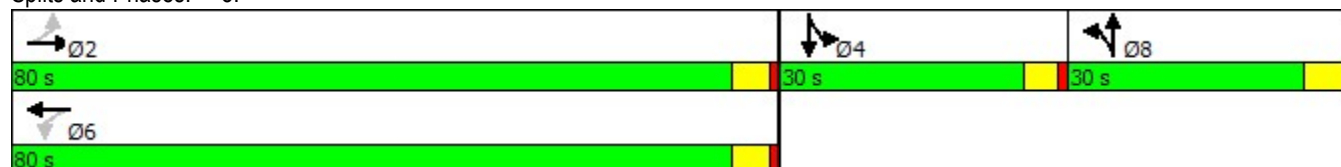
Intersection LOS: D

Intersection Capacity Utilization 69.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5:



Lanes, Volumes, Timings Alternative Improvement Option 2 - PM Peak Hour Report

5:

10/04/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	851	676	7	436	8	463	25	2	4	55	30
Future Volume (vph)	34	851	676	7	436	8	463	25	2	4	55	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	12	12	12	14	12
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.931			0.995			0.998			0.952	
Flt Protected	0.950			0.950			0.950	0.957			0.996	
Satd. Flow (prot)	1711	1676	0	1711	1792	0	1681	1690	0	0	1884	0
Flt Permitted	0.392			0.047			0.950	0.957			0.996	
Satd. Flow (perm)	706	1676	0	85	1792	0	1681	1690	0	0	1884	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			2						16	
Link Speed (mph)		35			35			40			25	
Link Distance (ft)		345			537			169			487	
Travel Time (s)		6.7			10.5			2.9			13.3	
Peak Hour Factor	0.77	0.96	0.90	0.58	0.89	0.50	0.84	0.89	0.50	0.50	0.86	0.75
Adj. Flow (vph)	44	886	751	12	490	16	551	28	4	8	64	40
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	44	1637	0	12	506	0	292	291	0	0	112	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	90.0	90.0		90.0	90.0		30.0	30.0		30.0	30.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		20.0%	20.0%		20.0%	20.0%	
Yellow Time (s)	4.1	4.1		4.1	4.1		4.4	4.4		3.6	3.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.1	5.1		5.1	5.1		5.4	5.4			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)	85.0	85.0		85.0	85.0		24.6	24.6			12.3	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.18	0.18			0.09	
v/c Ratio	0.10	1.55		0.23	0.46		0.97	0.96			0.61	
Control Delay	12.2	276.0		26.0	15.8		99.9	98.1			65.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	12.2	276.0		26.0	15.8		99.9	98.1			65.4	
LOS	B	F		C	B		F	F			E	
Approach Delay		269.0			16.0			99.0			65.4	
Approach LOS		F			B			F			E	

Lanes, Volumes, Timings

5:

10/04/2022

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 137

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.55

Intersection Signal Delay: 181.6

Intersection LOS: F

Intersection Capacity Utilization 115.0%

ICU Level of Service H

Analysis Period (min) 15

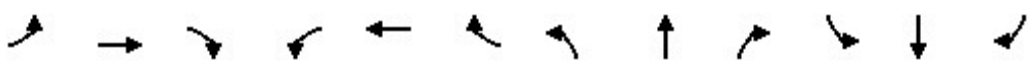
Splits and Phases: 5:



Lanes, Volumes, Timings Alternate Improvement Option 3 - AM Peak Hour Report

5:

10/04/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↗	↔			↔	
Traffic Volume (vph)	9	347	459	10	301	7	275	12	1	3	39	18
Future Volume (vph)	9	347	459	10	301	7	275	12	1	3	39	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	12	12	12	14	12
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.915			0.995			0.997			0.941	
Flt Protected		0.999			0.998		0.950	0.958			0.994	
Satd. Flow (prot)	0	3127	0	0	3397	0	1681	1690	0	0	1858	0
Flt Permitted		0.999			0.998		0.950	0.958			0.994	
Satd. Flow (perm)	0	3127	0	0	3397	0	1681	1690	0	0	1858	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		249			3			1			30	
Link Speed (mph)		35			35			40			25	
Link Distance (ft)		345			537			169			487	
Travel Time (s)		6.7			10.5			2.9			13.3	
Peak Hour Factor	0.75	0.85	0.83	0.62	0.90	0.58	0.78	0.60	0.25	0.25	0.81	0.38
Adj. Flow (vph)	12	408	553	16	334	12	353	20	4	12	48	47
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	0	973	0	0	362	0	187	190	0	0	107	0
Turn Type	Split	NA		Split	NA		Split	NA		Split	NA	
Protected Phases	2	2		6	6		8	8		4	4	
Permitted Phases												
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		25.0%	25.0%		25.0%	25.0%	
Yellow Time (s)	4.1	4.1		4.1	4.1		4.4	4.4		3.6	3.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.1			5.1		5.4	5.4			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)		25.3			14.8		15.1	15.1			9.2	
Actuated g/C Ratio		0.30			0.17		0.18	0.18			0.11	
v/c Ratio		0.88			0.61		0.63	0.63			0.47	
Control Delay		33.5			37.7		43.3	43.3			35.3	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		33.5			37.7		43.3	43.3			35.3	
LOS		C			D		D	D			D	
Approach Delay		33.5			37.7			43.3			35.3	
Approach LOS		C			D			D			D	

Lanes, Volumes, Timings

5:

10/04/2022

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 85

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 36.5

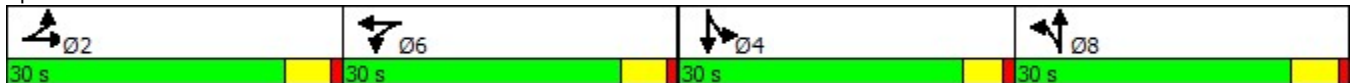
Intersection LOS: D

Intersection Capacity Utilization 54.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5:



Lanes, Volumes, Timings Alternative Improvement Option 3 - PM Peak Hour Report

5:

10/04/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↗	↔			↔	
Traffic Volume (vph)	34	851	676	7	436	8	463	25	2	4	55	30
Future Volume (vph)	34	851	676	7	436	8	463	25	2	4	55	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	12	12	12	14	12
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.933			0.995			0.998			0.952	
Flt Protected		0.999			0.999		0.950	0.957			0.996	
Satd. Flow (prot)	0	3189	0	0	3401	0	1681	1690	0	0	1884	0
Flt Permitted		0.999			0.999		0.950	0.957			0.996	
Satd. Flow (perm)	0	3189	0	0	3401	0	1681	1690	0	0	1884	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		153			2						16	
Link Speed (mph)		35			35			40			25	
Link Distance (ft)		345			537			169			487	
Travel Time (s)		6.7			10.5			2.9			13.3	
Peak Hour Factor	0.77	0.96	0.90	0.58	0.89	0.50	0.84	0.89	0.50	0.50	0.86	0.75
Adj. Flow (vph)	44	886	751	12	490	16	551	28	4	8	64	40
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	0	1681	0	0	518	0	292	291	0	0	112	0
Turn Type	Split	NA		Split	NA		Split	NA		Split	NA	
Protected Phases	2	2		6	6		8	8		4	4	
Permitted Phases												
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	60.0	60.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (%)	40.0%	40.0%		20.0%	20.0%		20.0%	20.0%		20.0%	20.0%	
Yellow Time (s)	4.1	4.1		4.1	4.1		4.4	4.4		3.6	3.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.1			5.1		5.4	5.4			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)		55.0			24.0		24.6	24.6			12.3	
Actuated g/C Ratio		0.40			0.18		0.18	0.18			0.09	
v/c Ratio		1.22			0.86		0.96	0.95			0.61	
Control Delay		138.7			69.6		98.1	96.2			65.1	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		138.7			69.6		98.1	96.2			65.1	
LOS		F			E		F	F			E	
Approach Delay		138.7			69.6			97.1			65.1	
Approach LOS		F			E			F			E	

Lanes, Volumes, Timings

5:

10/04/2022

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 136.2

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 115.1

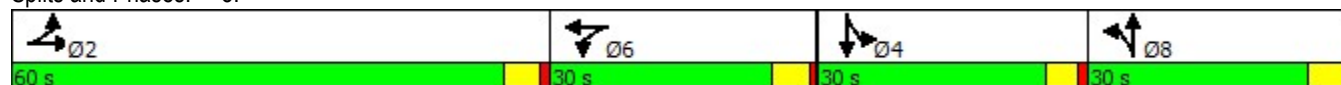
Intersection LOS: F

Intersection Capacity Utilization 91.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 5:



5:

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	885	676	0	443	8	463	25	2	4	55	30
Future Volume (vph)	0	885	676	0	443	8	463	25	2	4	55	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	12	12	12	14	12
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.933			0.995			0.998			0.952	
Flt Protected							0.950	0.957			0.996	
Satd. Flow (prot)	0	3192	0	0	3404	0	1681	1690	0	0	1884	0
Flt Permitted							0.950	0.957			0.996	
Satd. Flow (perm)	0	3192	0	0	3404	0	1681	1690	0	0	1884	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		226			3			1			21	
Link Speed (mph)		35			35			40			25	
Link Distance (ft)		345			537			169			487	
Travel Time (s)		6.7			10.5			2.9			13.3	
Peak Hour Factor	0.77	0.96	0.90	0.58	0.89	0.50	0.84	0.89	0.50	0.50	0.86	0.75
Adj. Flow (vph)	0	922	751	0	498	16	551	28	4	8	64	40
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	0	1673	0	0	514	0	292	291	0	0	112	0
Turn Type		NA			NA		Split	NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases												
Detector Phase		2			6		8	8		4	4	
Switch Phase												
Minimum Initial (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)		30.0			30.0		30.0	30.0		30.0	30.0	
Total Split (s)		60.0			60.0		30.0	30.0		30.0	30.0	
Total Split (%)		50.0%			50.0%		25.0%	25.0%		25.0%	25.0%	
Yellow Time (s)		4.1			4.1		4.4	4.4		3.6	3.6	
All-Red Time (s)		1.0			1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.1			5.1		5.4	5.4			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		Min			Min		Min	Min		Min	Min	
Act Effct Green (s)		55.1			55.1		22.1	22.1			10.4	
Actuated g/C Ratio		0.54			0.54		0.22	0.22			0.10	
v/c Ratio		0.92			0.28		0.81	0.80			0.54	
Control Delay		29.6			14.2		56.9	55.8			45.7	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		29.6			14.2		56.9	55.8			45.7	
LOS		C			B		E	E			D	
Approach Delay		29.6			14.2			56.4			45.7	
Approach LOS		C			B			E			D	

Lanes, Volumes, Timings

5:

10/05/2022

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 102.7

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 32.9

Intersection LOS: C

Intersection Capacity Utilization 75.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5:

