

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑		↑↑			↑	↑
Volume (vph)	0	0	0	0	1125	556	0	423	0	0	571	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		265	0		0	0		230
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	5085	1583	0	3539	0	0	1863	1583
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	5085	1583	0	3539	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						306						33
Link Speed (mph)		30			30			30				30
Link Distance (ft)		262			387			99				351
Travel Time (s)		6.0			8.8			2.3				8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1223	604	0	460	0	0	621	483
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1223	604	0	460	0	0	621	483
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type					NA	Perm		NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases						8						6
Minimum Split (s)					15.7	15.7		15.7			15.7	15.7
Total Split (s)					42.4	42.4		47.6			47.6	47.6
Total Split (%)					47.1%	47.1%		52.9%			52.9%	52.9%
Maximum Green (s)					36.7	36.7		42.3			41.9	41.9
Yellow Time (s)					3.9	3.9		3.6			3.9	3.9
All-Red Time (s)					1.8	1.8		1.7			1.8	1.8
Lost Time Adjust (s)					0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)					5.7	5.7		5.3			5.7	5.7
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)					21.0	21.0		14.0			14.0	14.0
Pedestrian Calls (#/hr)					0	0		0			0	0
Act Effct Green (s)					36.7	36.7		42.3			41.9	41.9
Actuated g/C Ratio					0.41	0.41		0.47			0.47	0.47
v/c Ratio					0.59	0.73		0.28			0.72	0.64
Control Delay					22.2	16.7		15.1			20.4	17.3

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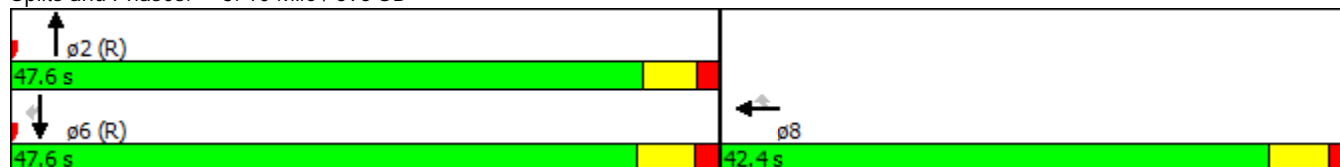


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay					0.0	0.0		0.0			0.0	0.0
Total Delay					22.2	16.7		15.1			20.4	17.3
LOS					C	B		B			C	B
Approach Delay					20.4			15.1			19.0	
Approach LOS					C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	70 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	19.2
Intersection LOS:	B
Intersection Capacity Utilization	61.3%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 3: 10 Mile / 696 SD



Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	78	99	41	97	21	45	815	11	23	1126	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	45		0	1000		100	1000		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.916			0.973				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1706	0	1770	1812	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.675			0.472			0.074			0.244		
Satd. Flow (perm)	1257	1706	0	879	1812	0	138	1863	1583	455	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			13				36			36
Link Speed (mph)		30			30			30				30
Link Distance (ft)		225			261			2078				2640
Travel Time (s)		5.1			5.9			47.2				60.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	85	108	45	105	23	49	886	12	25	1224	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	193	0	45	128	0	49	886	12	25	1224	89
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
6: Lincoln & Coolidge

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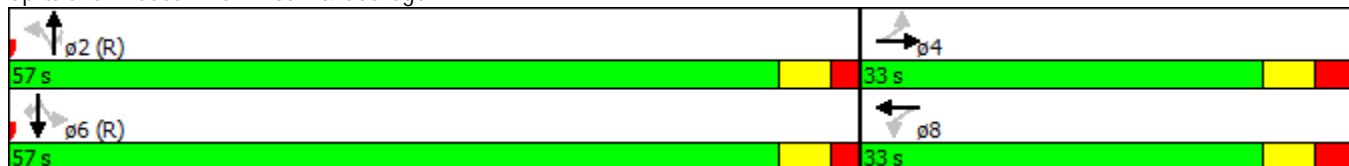


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	29.0	29.0		29.0	29.0		24.5	24.5	24.5	24.5	24.5	24.5
Total Split (s)	33.0	33.0		33.0	33.0		57.0	57.0	57.0	57.0	57.0	57.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	27.0	27.0		27.0	27.0		51.5	51.5	51.5	51.5	51.5	51.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	2.5	2.5		2.5	2.5		1.9	1.9	1.9	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	12.7	12.7		12.7	12.7		65.8	65.8	65.8	65.8	65.8	65.8
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.55	0.66		0.36	0.48		0.49	0.65	0.01	0.08	0.90	0.08
Control Delay	46.6	34.3		41.3	36.7		24.9	8.1	0.0	8.0	24.2	5.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	34.3		41.3	36.7		24.9	8.1	0.0	8.0	24.2	5.3
LOS	D	C		D	D		C	A	A	A	C	A
Approach Delay		38.4			37.9			8.9			22.7	
Approach LOS		D			D			A			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.90
Intersection Signal Delay:	20.5
Intersection LOS:	C
Intersection Capacity Utilization:	87.3%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 6: Lincoln & Coolidge



Lanes, Volumes, Timings
9: Coolidge & 11 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	304	99	153	771	59	95	810	85	51	820	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	175		0	1000		150	182		150
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.989				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3408	0	1770	3500	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.177			0.460			0.089			0.089		
Satd. Flow (perm)	330	3408	0	857	3500	0	166	1863	1583	166	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			10				59			52
Link Speed (mph)		30			30			35				30
Link Distance (ft)		441			510			2640				1160
Travel Time (s)		10.0			11.6			51.4				26.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	330	108	166	838	64	103	880	92	55	891	173
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	438	0	166	902	0	103	880	92	55	891	173
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings

9: Coolidge & 11 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	25.8	25.8		25.8	25.8		24.9	24.9	24.9	24.9	24.9	24.9
Total Split (s)	39.0	39.0		39.0	39.0		51.0	51.0	51.0	51.0	51.0	51.0
Total Split (%)	43.3%	43.3%		43.3%	43.3%		56.7%	56.7%	56.7%	56.7%	56.7%	56.7%
Maximum Green (s)	33.2	33.2		33.2	33.2		45.1	45.1	45.1	45.1	45.1	45.1
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.8	5.8		5.9	5.9	5.9	5.9	5.9	5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	33.2	33.2		33.2	33.2		45.1	45.1	45.1	45.1	45.1	45.1
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.50	0.50	0.50	0.50	0.50	0.50
v/c Ratio	0.99	0.34		0.53	0.70		1.24	0.94	0.11	0.66	0.95	0.21
Control Delay	113.4	18.6		29.6	27.3		195.1	37.3	4.9	54.5	40.7	11.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.4	18.6		29.6	27.3		195.1	37.3	4.9	54.5	40.7	11.2
LOS	F	B		C	C		F	D	A	D	D	B
Approach Delay		39.0			27.6			49.6				36.8
Approach LOS		D			C			D				D

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 67 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay: 38.2 Intersection LOS: D
 Intersection Capacity Utilization 97.2% ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 9: Coolidge & 11 Mile



Lanes, Volumes, Timings

12: Havard

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Volume (vph)	45	38	14	118	46	25	11	993	16	11	861	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		75	85		75
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.981			0.982				0.850			0.850
Flt Protected		0.977			0.970		0.950			0.950		
Satd. Flow (prot)	0	1845	0	0	2011	0	1652	1801	1583	1652	1801	1583
Flt Permitted		0.803			0.744		0.211			0.141		
Satd. Flow (perm)	0	1516	0	0	1542	0	367	1801	1583	245	1801	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			9				61			61
Link Speed (mph)		25			25			30				30
Link Distance (ft)		307			294			1160				1468
Travel Time (s)		8.4			8.0			26.4				33.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	41	15	128	50	27	12	1079	17	12	936	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	205	0	12	1079	17	12	936	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	0.96	1.00	1.00	0.85	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	NA	Perm	NA	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

12: Havard

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		22.0	22.0		22.0	22.0	
Total Split (s)	32.0	32.0		32.0	32.0		58.0	58.0		58.0	58.0	
Total Split (%)	35.6%	35.6%		35.6%	35.6%		64.4%	64.4%		64.4%	64.4%	
Maximum Green (s)	28.0	28.0		28.0	28.0		54.0	54.0		54.0	54.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		16.4			16.4		65.6	65.6	0.0	65.6	65.6	0.0
Actuated g/C Ratio		0.18			0.18		0.73	0.73	0.00	0.73	0.73	0.00
v/c Ratio		0.37			0.71		0.04	0.82	0.28	0.07	0.71	0.15
Control Delay		31.3			46.1		2.8	9.1	8.0	8.4	13.0	3.9
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		31.3			46.1		2.8	9.1	8.0	8.4	13.0	3.9
LOS		C			D		A	A	A	A	B	A
Approach Delay		31.3			46.1			9.0			12.8	
Approach LOS		C			D			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 14.7
 Intersection LOS: B
 Intersection Capacity Utilization 74.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 12: Havard



Lanes, Volumes, Timings
15: Catalpa

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	164	60	76	136	48	70	888	105	29	826	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	95		0	55		0	250		100	600		100
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.960			0.961				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1788	0	1770	1790	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.511			0.408			0.212			0.177		
Satd. Flow (perm)	952	1788	0	760	1790	0	395	1863	1583	330	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			21				53			36
Link Speed (mph)		30			30			30				30
Link Distance (ft)		331			278			1468				967
Travel Time (s)		7.5			6.3			33.4				22.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	178	65	83	148	52	76	965	114	32	898	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	243	0	83	200	0	76	965	114	32	898	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
15: Catalpa

4/23/2018

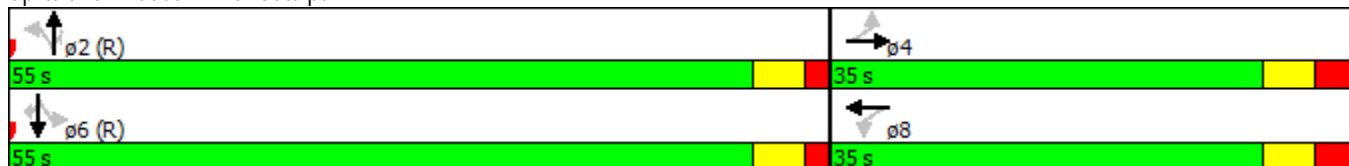


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	28.0	28.0		28.0	28.0		23.2	23.2	23.2	23.2	23.2	23.2
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Maximum Green (s)	29.0	29.0		29.0	29.0		49.8	49.8	49.8	49.8	49.8	49.8
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.2	5.2	5.2	5.2	5.2	5.2
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.2	10.2	10.2	10.2	10.2	10.2
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	16.6	16.6		16.6	16.6		62.2	62.2	62.2	62.2	62.2	62.2
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.69	0.69	0.69	0.69	0.69	0.69
v/c Ratio	0.23	0.70		0.59	0.58		0.28	0.75	0.10	0.14	0.70	0.02
Control Delay	32.4	41.6		50.0	35.8		12.3	16.2	6.1	3.2	5.3	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	41.6		50.0	35.8		12.3	16.2	6.1	3.2	5.3	0.1
LOS	C	D		D	D		B	B	A	A	A	A
Approach Delay		40.3			39.9			14.9				5.1
Approach LOS		D			D			B				A

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	16.8
Intersection LOS:	B
Intersection Capacity Utilization:	85.2%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 15: Catalpa



Lanes, Volumes, Timings

18: Wiltshire

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Volume (vph)	48	56	74	30	40	19	26	866	8	2	828	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		150	75		150
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.944			0.971				0.850			0.850
Flt Protected		0.987			0.983		0.950			0.950		
Satd. Flow (prot)	0	1666	0	0	1707	0	1486	1621	1425	1486	1621	1425
Flt Permitted		0.886			0.859		0.176			0.152		
Satd. Flow (perm)	0	1496	0	0	1492	0	275	1621	1425	238	1621	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			14				101			101
Link Speed (mph)		25			25			30				30
Link Distance (ft)		284			295			967				1357
Travel Time (s)		7.7			8.0			22.0				30.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	61	80	33	43	21	28	941	9	2	900	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	97	0	28	941	9	2	900	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.14	1.05	1.14	1.14	1.05	1.14	1.25	1.19	1.14	1.25	1.19	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	NA	Perm	NA	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Minimum Split (s)	27.0	27.0		27.0	27.0		23.3	23.3		23.3		23.3
Total Split (s)	27.0	27.0		27.0	27.0		63.0	63.0		63.0		63.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%		70.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		57.7	57.7		57.7		57.7
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5		3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		1.8	1.8		1.8		1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		6.0			6.0		5.3	5.3		5.3		5.3
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		7.0	7.0		7.0		7.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0		0
Act Effct Green (s)		21.0			21.0		57.7	57.7	0.0	57.7	57.7	0.0
Actuated g/C Ratio		0.23			0.23		0.64	0.64	0.00	0.64	0.64	0.00
v/c Ratio		0.51			0.27		0.16	0.91	0.09	0.01	0.87	0.17

Lanes, Volumes, Timings

18: Wiltshire

4/23/2018

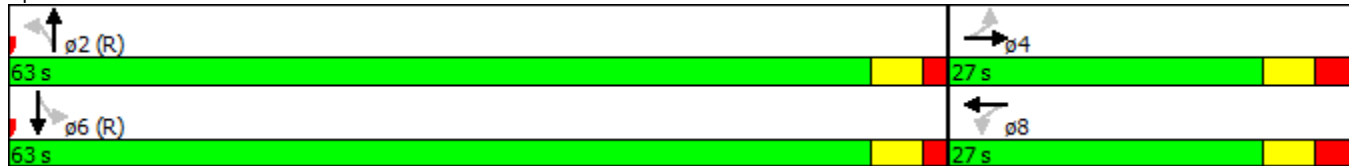


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		29.6			26.5		13.1	28.8	1.2	9.0	23.1	1.2
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		29.6			26.5		13.1	28.8	1.2	9.0	23.1	1.2
LOS		C			C		B	C	A	A	C	A
Approach Delay		29.6			26.5			28.1			22.7	
Approach LOS		C			C			C			C	

Intersection Summary






















Area Type:	CBD
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	58 (64%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	25.9
Intersection LOS:	C
Intersection Capacity Utilization	73.8%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 18: Wiltshire



Lanes, Volumes, Timings
21: 12 Mile

4/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	434	87	290	771	88	114	716	123	154	499	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		200	130		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.975			0.985			0.978				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1593	3106	0	1593	3138	0	1593	3115	0	1593	1676	1425
Flt Permitted	0.191			0.308			0.151			0.145		
Satd. Flow (perm)	320	3106	0	516	3138	0	253	3115	0	243	1676	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			14			22				228
Link Speed (mph)		30			30			30				30
Link Distance (ft)		309			491			331				529
Travel Time (s)		7.0			11.2			7.5				12.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	472	95	315	838	96	124	778	134	167	542	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	187	567	0	315	934	0	124	912	0	167	542	96
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	NA
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings

21: 12 Mile

4/23/2018

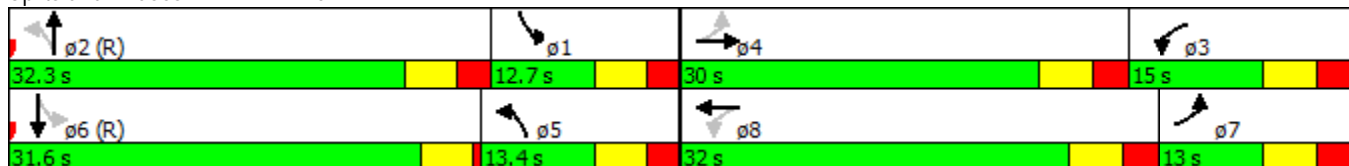


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	29.0		10.0	29.0		9.8	26.8		9.8	25.0	
Total Split (s)	13.0	30.0		15.0	32.0		13.4	32.3		12.7	31.6	
Total Split (%)	14.4%	33.3%		16.7%	35.6%		14.9%	35.9%		14.1%	35.1%	
Maximum Green (s)	7.0	24.0		9.0	26.0		7.6	26.5		6.9	27.6	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.4	2.4		2.4	2.4		2.3	2.3		2.3	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.8	5.8		5.8	4.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		16.0			16.0			14.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	27.9	20.9		37.1	26.0		34.1	26.5		32.7	27.6	0.0
Actuated g/C Ratio	0.31	0.23		0.41	0.29		0.38	0.29		0.36	0.31	0.00
v/c Ratio	0.94	0.76		0.88	1.02		0.59	0.98		0.87	1.06	0.42
Control Delay	84.5	37.8		58.0	67.4		33.0	49.6		73.2	87.9	5.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	84.5	37.8		58.0	67.4		33.0	49.6		73.2	87.9	5.6
LOS	F	D		E	E		C	D		E	F	A
Approach Delay		49.4			65.0			47.6			75.0	
Approach LOS		D			E			D			E	

Intersection Summary

Area Type:	CBD
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.06
Intersection Signal Delay:	59.4
Intersection LOS:	E
Intersection Capacity Utilization:	92.9%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 21: 12 Mile



Lanes, Volumes, Timings

24:

4/23/2018



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	5	954	5	5	877
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1694	0	1861	0	1770	1863
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1694	0	1861	0	1770	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	200		1357			331
Travel Time (s)	4.5		30.8			7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	1037	5	5	953
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	1042	0	5	953
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		24			24
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.5%
Analysis Period (min)	15
	ICU Level of Service B

Lanes, Volumes, Timings

26:

4/23/2018



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑			↑
Volume (vph)	0	0	980	0	0	1015
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	0	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	127		351			2078
Travel Time (s)	2.9		8.0			47.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1065	0	0	1103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1065	0	0	1103
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.8%
	ICU Level of Service B
Analysis Period (min)	15

Arterial Level of Service: NB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
11 Mile	III	35	60.0	37.3	97.3	0.50	18.5	C
Total	III		60.0	37.3	97.3	0.50	18.5	C

Arterial Level of Service: SB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	30	63.5	24.2	87.7	0.50	20.5	C
Total	III		63.5	24.2	87.7	0.50	20.5	C

Arterial Level of Service: NB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
11 Mile	III	35	60.0	22.5	82.5	0.50	21.8	C
Total	III		60.0	22.5	82.5	0.50	21.8	C

Arterial Level of Service: SB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	30	63.5	18.3	81.8	0.50	22.0	C
Total	III		63.5	18.3	81.8	0.50	22.0	C

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑		↑↑			↑	↑
Volume (vph)	0	0	0	0	1070	526	0	400	0	0	530	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		265	0		0	0		230
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	5085	1583	0	3539	0	0	1863	1583
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	5085	1583	0	3539	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						329						33
Link Speed (mph)		30			30			30				30
Link Distance (ft)		262			387			99				351
Travel Time (s)		6.0			8.8			2.3				8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1163	572	0	435	0	0	576	446
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1163	572	0	435	0	0	576	446
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type					NA	Perm		NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases						8						6
Minimum Split (s)					15.7	15.7		15.7			15.7	15.7
Total Split (s)					42.4	42.4		47.6			47.6	47.6
Total Split (%)					47.1%	47.1%		52.9%			52.9%	52.9%
Maximum Green (s)					36.7	36.7		42.3			41.9	41.9
Yellow Time (s)					3.9	3.9		3.6			3.9	3.9
All-Red Time (s)					1.8	1.8		1.7			1.8	1.8
Lost Time Adjust (s)					0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)					5.7	5.7		5.3			5.7	5.7
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)					21.0	21.0		14.0			14.0	14.0
Pedestrian Calls (#/hr)					0	0		0			0	0
Act Effct Green (s)					36.7	36.7		42.3			41.9	41.9
Actuated g/C Ratio					0.41	0.41		0.47			0.47	0.47
v/c Ratio					0.56	0.68		0.26			0.66	0.59
Control Delay					21.8	13.5		14.9			19.5	16.6

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/23/2018

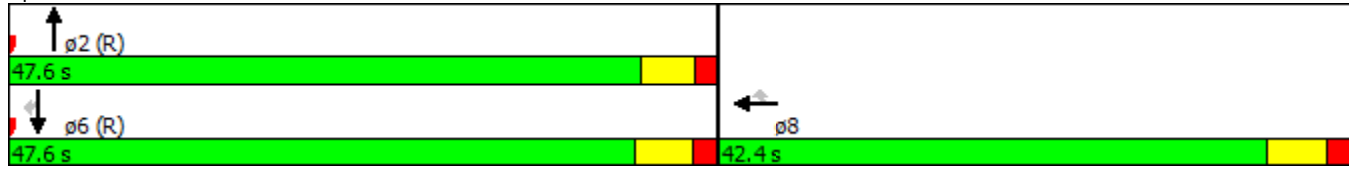


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay					0.0	0.0		0.0			0.0	0.0
Total Delay					21.8	13.5		14.9			19.5	16.6
LOS					C	B		B			B	B
Approach Delay					19.0			14.9			18.2	
Approach LOS					B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	70 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	18.2
Intersection LOS:	B
Intersection Capacity Utilization	58.1%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 3: 10 Mile / 696 SD



Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	74	94	39	92	20	43	770	10	22	1046	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	45		0	1000		100	1000		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.916			0.973				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1706	0	1770	1812	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.679			0.494			0.126			0.272		
Satd. Flow (perm)	1265	1706	0	920	1812	0	235	1863	1583	507	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			13				36			36
Link Speed (mph)		30			30			30				30
Link Distance (ft)		225			261			2078				2640
Travel Time (s)		5.1			5.9			47.2				60.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	80	102	42	100	22	47	837	11	24	1137	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	182	0	42	122	0	47	837	11	24	1137	85
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/23/2018

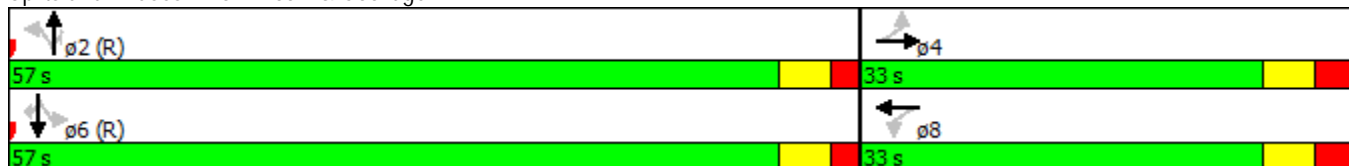


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	29.0	29.0		29.0	29.0		24.5	24.5	24.5	24.5	24.5	24.5
Total Split (s)	33.0	33.0		33.0	33.0		57.0	57.0	57.0	57.0	57.0	57.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	27.0	27.0		27.0	27.0		51.5	51.5	51.5	51.5	51.5	51.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	2.5	2.5		2.5	2.5		1.9	1.9	1.9	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	12.0	12.0		12.0	12.0		66.5	66.5	66.5	66.5	66.5	66.5
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.74	0.74	0.74	0.74	0.74	0.74
v/c Ratio	0.55	0.63		0.34	0.49		0.27	0.61	0.01	0.06	0.83	0.07
Control Delay	48.0	30.9		41.6	37.7		7.1	7.2	0.0	7.1	18.3	4.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	30.9		41.6	37.7		7.1	7.2	0.0	7.1	18.3	4.8
LOS	D	C		D	D		A	A	A	A	B	A
Approach Delay		36.7			38.7			7.1				17.2
Approach LOS		D			D			A				B

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	17.1
Intersection LOS:	B
Intersection Capacity Utilization:	82.6%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 6: Lincoln & Coolidge



Lanes, Volumes, Timings
9: Coolidge & 11 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	289	94	146	734	56	90	705	81	49	759	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	175		0	1000		150	182		150
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.989				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3408	0	1770	3500	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.178			0.469			0.131			0.174		
Satd. Flow (perm)	332	3408	0	874	3500	0	244	1863	1583	324	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55			10				64			60
Link Speed (mph)		30			30			35				30
Link Distance (ft)		441			510			2640				1160
Travel Time (s)		10.0			11.6			51.4				26.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	314	102	159	798	61	98	766	88	53	825	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	416	0	159	859	0	98	766	88	53	825	164
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings

9: Coolidge & 11 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	25.8	25.8		25.8	25.8		24.9	24.9	24.9	24.9	24.9	24.9
Total Split (s)	39.0	39.0		39.0	39.0		51.0	51.0	51.0	51.0	51.0	51.0
Total Split (%)	43.3%	43.3%		43.3%	43.3%		56.7%	56.7%	56.7%	56.7%	56.7%	56.7%
Maximum Green (s)	33.2	33.2		33.2	33.2		45.1	45.1	45.1	45.1	45.1	45.1
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.8	5.8		5.9	5.9	5.9	5.9	5.9	5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	30.7	30.7		30.7	30.7		47.6	47.6	47.6	47.6	47.6	47.6
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.53	0.53	0.53	0.53	0.53	0.53
v/c Ratio	1.01	0.35		0.53	0.72		0.76	0.78	0.10	0.31	0.84	0.19
Control Delay	120.8	19.4		30.5	29.0		53.1	22.5	5.0	21.5	27.4	9.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	120.8	19.4		30.5	29.0		53.1	22.5	5.0	21.5	27.4	9.7
LOS	F	B		C	C		D	C	A	C	C	A
Approach Delay		41.2			29.2			24.1				24.3
Approach LOS		D			C			C				C

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	67 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.01
Intersection Signal Delay:	28.2
Intersection LOS:	C
Intersection Capacity Utilization:	92.3%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 9: Coolidge & 11 Mile



Lanes, Volumes, Timings

12: Havard

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Volume (vph)	31	36	8	112	44	24	10	943	14	10	800	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		75	85		75
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.985			0.982				0.850			0.850
Flt Protected		0.980			0.970		0.950			0.950		
Satd. Flow (prot)	0	1858	0	0	2011	0	1652	1801	1583	1652	1801	1583
Flt Permitted		0.839			0.775		0.248			0.174		
Satd. Flow (perm)	0	1591	0	0	1607	0	431	1801	1583	303	1801	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			9				61			61
Link Speed (mph)		25			25			30				30
Link Distance (ft)		307			294			1160				1468
Travel Time (s)		8.4			8.0			26.4				33.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	39	9	122	48	26	11	1025	15	11	870	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	196	0	11	1025	15	11	870	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	0.96	1.00	1.00	0.85	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	NA	Perm	NA	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

12: Havard

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		22.0	22.0		22.0	22.0	
Total Split (s)	32.0	32.0		32.0	32.0		58.0	58.0		58.0	58.0	
Total Split (%)	35.6%	35.6%		35.6%	35.6%		64.4%	64.4%		64.4%	64.4%	
Maximum Green (s)	28.0	28.0		28.0	28.0		54.0	54.0		54.0	54.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.6		15.6	15.6		66.4	66.4	0.0	66.4	66.4	0.0
Actuated g/C Ratio		0.17		0.17	0.17		0.74	0.74	0.00	0.74	0.74	0.00
v/c Ratio		0.29		0.69	0.69		0.03	0.77	0.25	0.05	0.66	0.13
Control Delay		30.5		44.9	44.9		2.8	8.2	8.2	7.7	11.2	3.6
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		30.5		44.9	44.9		2.8	8.2	8.2	7.7	11.2	3.6
LOS		C		D	D		A	A	A	A	B	A
Approach Delay		30.5		44.9	44.9			8.1			11.1	
Approach LOS		C		D	D			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 13.4
 Intersection LOS: B
 Intersection Capacity Utilization 71.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 12: Havard



Lanes, Volumes, Timings

15: Catalpa

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	156	57	72	129	46	67	822	100	28	780	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	95		0	55		0	250		100	600		100
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.960			0.961				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1788	0	1770	1790	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.529			0.424			0.242			0.219		
Satd. Flow (perm)	985	1788	0	790	1790	0	451	1863	1583	408	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			21				55			36
Link Speed (mph)		30			30			30				30
Link Distance (ft)		331			278			1468				967
Travel Time (s)		7.5			6.3			33.4				22.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	170	62	78	140	50	73	893	109	30	848	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	232	0	78	190	0	73	893	109	30	848	20
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
15: Catalpa

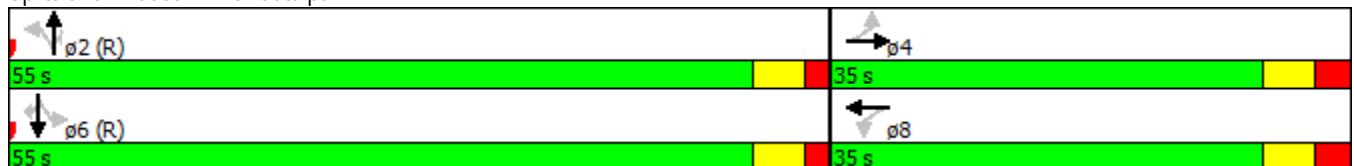
4/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	28.0	28.0		28.0	28.0		23.2	23.2	23.2	23.2	23.2	23.2
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Maximum Green (s)	29.0	29.0		29.0	29.0		49.8	49.8	49.8	49.8	49.8	49.8
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.2	5.2	5.2	5.2	5.2	5.2
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.2	10.2	10.2	10.2	10.2	10.2
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	16.0	16.0		16.0	16.0		62.8	62.8	62.8	62.8	62.8	62.8
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.70	0.70	0.70	0.70	0.70	0.70
v/c Ratio	0.22	0.69		0.56	0.57		0.23	0.69	0.10	0.11	0.65	0.02
Control Delay	32.5	41.6		47.7	35.7		11.1	13.6	5.8	2.8	4.6	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	41.6		47.7	35.7		11.1	13.6	5.8	2.8	4.6	0.1
LOS	C	D		D	D		B	B	A	A	A	A
Approach Delay		40.3			39.2			12.6				4.4
Approach LOS		D			D			B				A

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 15.5
 Intersection LOS: B
 Intersection Capacity Utilization 80.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 15: Catalpa



Lanes, Volumes, Timings

18: Wiltshire

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Volume (vph)	46	53	70	29	38	18	25	801	7	2	781	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		150	75		150
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.944			0.971				0.850			0.850
Flt Protected		0.987			0.983		0.950			0.950		
Satd. Flow (prot)	0	1666	0	0	1707	0	1486	1621	1425	1486	1621	1425
Flt Permitted		0.887			0.866		0.206			0.193		
Satd. Flow (perm)	0	1497	0	0	1504	0	322	1621	1425	302	1621	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			14				101			101
Link Speed (mph)		25			25			30				30
Link Distance (ft)		284			295			967				1357
Travel Time (s)		7.7			8.0			22.0				30.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	58	76	32	41	20	27	871	8	2	849	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	184	0	0	93	0	27	871	8	2	849	16
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.14	1.05	1.14	1.14	1.05	1.14	1.25	1.19	1.14	1.25	1.19	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	NA	Perm	NA	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Minimum Split (s)	27.0	27.0		27.0	27.0		23.3	23.3		23.3	23.3	
Total Split (s)	27.0	27.0		27.0	27.0		63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0		57.7	57.7		57.7	57.7	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		5.3	5.3		5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		21.0			21.0		57.7	57.7	0.0	57.7	57.7	0.0
Actuated g/C Ratio		0.23			0.23		0.64	0.64	0.00	0.64	0.64	0.00
v/c Ratio		0.49			0.26		0.13	0.84	0.08	0.01	0.82	0.16

Lanes, Volumes, Timings

18: Wiltshire

4/23/2018

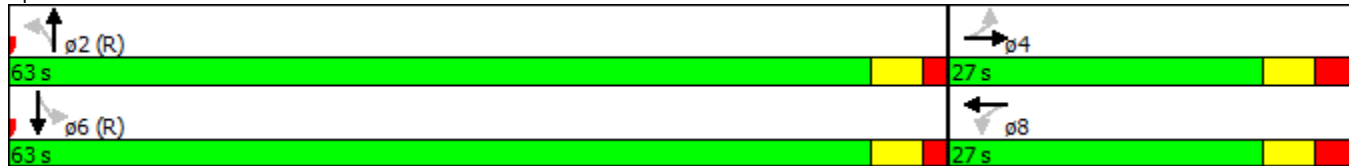


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		28.7			26.1		11.7	24.2	1.1	8.5	21.5	1.7
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		28.7			26.1		11.7	24.2	1.1	8.5	21.5	1.7
LOS		C			C		B	C	A	A	C	A
Approach Delay		28.7			26.1			23.6			21.1	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type:	CBD
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	58 (64%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.84
Intersection Signal Delay:	23.1
Intersection LOS:	C
Intersection Capacity Utilization	69.3%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 18: Wiltshire



Lanes, Volumes, Timings

21: 12 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	413	83	276	734	80	108	658	117	147	468	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		200	130		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.975			0.985			0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1593	3106	0	1593	3138	0	1593	3112	0	1593	1676	1425
Flt Permitted	0.199			0.328			0.158			0.159		
Satd. Flow (perm)	334	3106	0	550	3138	0	265	3112	0	267	1676	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			13			23				228
Link Speed (mph)		30			30			30				30
Link Distance (ft)		309			491			331				529
Travel Time (s)		7.0			11.2			7.5				12.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	449	90	300	798	87	117	715	127	160	509	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	539	0	300	885	0	117	842	0	160	509	91
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	NA
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings

21: 12 Mile

4/23/2018

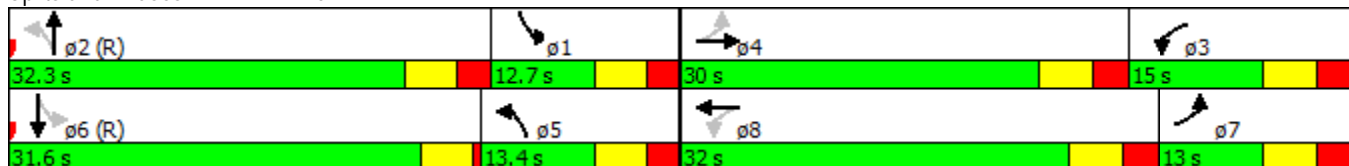


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	29.0		10.0	29.0		9.8	26.8		9.8	25.0	
Total Split (s)	13.0	30.0		15.0	32.0		13.4	32.3		12.7	31.6	
Total Split (%)	14.4%	33.3%		16.7%	35.6%		14.9%	35.9%		14.1%	35.1%	
Maximum Green (s)	7.0	24.0		9.0	26.0		7.6	26.5		6.9	27.6	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.4	2.4		2.4	2.4		2.3	2.3		2.3	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.8	5.8		5.8	4.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		16.0			16.0			14.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	27.1	20.1		37.4	26.0		33.7	26.5		34.0	30.3	0.0
Actuated g/C Ratio	0.30	0.22		0.42	0.29		0.37	0.29		0.38	0.34	0.00
v/c Ratio	0.90	0.75		0.80	0.97		0.57	0.90		0.79	0.90	0.40
Control Delay	74.6	38.0		46.2	55.2		31.4	39.8		59.1	52.2	5.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	74.6	38.0		46.2	55.2		31.4	39.8		59.1	52.2	5.1
LOS	E	D		D	E		C	D		E	D	A
Approach Delay		47.1			52.9			38.8			48.0	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: CBD
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 47.0 Intersection LOS: D
 Intersection Capacity Utilization 88.5% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 21: 12 Mile



Lanes, Volumes, Timings

24:

4/23/2018



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	5	883	5	5	827
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1694	0	1861	0	1770	1863
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1694	0	1861	0	1770	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	200		1357			331
Travel Time (s)	4.5		30.8			7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	960	5	5	899
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	965	0	5	899
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		24			24
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 56.8% ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

26:

4/23/2018



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑			↑
Volume (vph)	0	0	926	0	0	940
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	0	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	127		351			2078
Travel Time (s)	2.9		8.0			47.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1007	0	0	1022
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1007	0	0	1022
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.8%
Analysis Period (min)	15
	ICU Level of Service A

Network Totals

Number of Intersections	8
Total Delay (hr)	108
Stops (#)	11540
Average Speed (mph)	17
Total Travel Time (hr)	244
Distance Traveled (mi)	4136
Fuel Consumed (gal)	313
Fuel Economy (mpg)	13.2
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	44
Performance Index	140.1

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑		↑↑			↑↑	↑
Volume (vph)	0	0	0	0	1070	526	0	400	0	0	530	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		265	0		0	0		230
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	5085	1583	0	3539	0	0	3539	1583
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	5085	1583	0	3539	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						351						33
Link Speed (mph)		30			30			30				30
Link Distance (ft)		262			387			99				2429
Travel Time (s)		6.0			8.8			2.3				55.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1163	572	0	435	0	0	576	446
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1163	572	0	435	0	0	576	446
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type					NA	Perm		NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases						8						6
Minimum Split (s)					15.7	15.7		15.7			15.7	15.7
Total Split (s)					40.0	40.0		50.0			50.0	50.0
Total Split (%)					44.4%	44.4%		55.6%			55.6%	55.6%
Maximum Green (s)					34.3	34.3		44.7			44.3	44.3
Yellow Time (s)					3.9	3.9		3.6			3.9	3.9
All-Red Time (s)					1.8	1.8		1.7			1.8	1.8
Lost Time Adjust (s)					0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)					5.7	5.7		5.3			5.7	5.7
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)					21.0	21.0		14.0			14.0	14.0
Pedestrian Calls (#/hr)					0	0		0			0	0
Act Effct Green (s)					34.3	34.3		44.7			44.3	44.3
Actuated g/C Ratio					0.38	0.38		0.50			0.49	0.49
v/c Ratio					0.60	0.70		0.25			0.33	0.56
Control Delay					23.9	13.8		13.5			14.2	17.1

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/17/2018

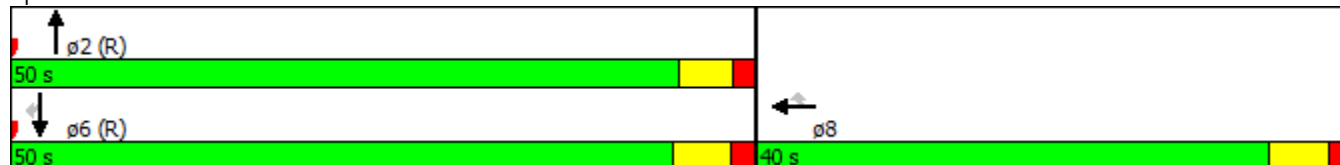


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay					0.0	0.0		0.0			0.0	0.0
Total Delay					23.9	13.8		13.5			14.2	17.1
LOS					C	B		B			B	B
Approach Delay					20.6			13.5			15.5	
Approach LOS					C			B			B	

Intersection Summary























Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	70 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	18.0
Intersection LOS:	B
Intersection Capacity Utilization	55.6%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 3: 10 Mile / 696 SD



Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/17/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	74	94	39	92	20	43	770	10	22	1046	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	45		0	1000		0	1000		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.916			0.973			0.998			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1706	0	1770	1812	0	1770	3532	0	1770	3504	0
Flt Permitted	0.679			0.494			0.203			0.322		
Satd. Flow (perm)	1265	1706	0	920	1812	0	378	3532	0	600	3504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			13			2			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		225			261			2429			2640	
Travel Time (s)		5.1			5.9			55.2			60.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	80	102	42	100	22	47	837	11	24	1137	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	182	0	42	122	0	47	848	0	24	1222	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/17/2018

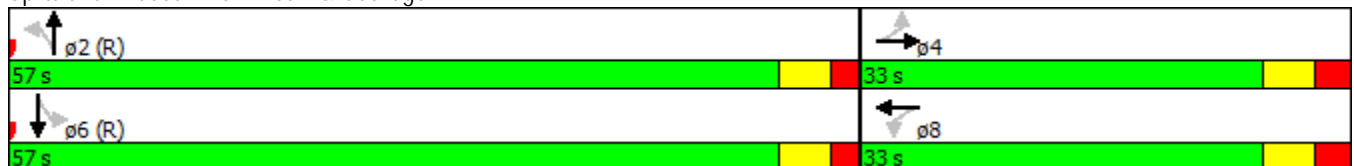


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		24.5	24.5		24.5	24.5	
Total Split (s)	33.0	33.0		33.0	33.0		57.0	57.0		57.0	57.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	27.0	27.0		27.0	27.0		51.5	51.5		51.5	51.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	12.0	12.0		12.0	12.0		66.5	66.5		66.5	66.5	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.74	0.74		0.74	0.74	
v/c Ratio	0.55	0.63		0.34	0.49		0.17	0.32		0.05	0.47	
Control Delay	48.0	30.9		41.6	37.7		4.4	3.4		5.8	6.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.0	30.9		41.6	37.7		4.4	3.4		5.8	6.3	
LOS	D	C		D	D		A	A		A	A	
Approach Delay		36.7			38.7			3.4			6.2	
Approach LOS		D			D			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 10.6
 Intersection LOS: B
 Intersection Capacity Utilization 63.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 6: Lincoln & Coolidge



Lanes, Volumes, Timings
9: Coolidge & 11 Mile

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	289	94	146	734	56	90	705	81	49	759	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	175		0	1000		0	182		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.963			0.989			0.985			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3408	0	1770	3500	0	1770	3486	0	1770	3451	0
Flt Permitted	0.184			0.471			0.218			0.272		
Satd. Flow (perm)	343	3408	0	877	3500	0	406	3486	0	507	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			11			18			34	
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		441			510			2640			1160	
Travel Time (s)		10.0			11.6			51.4			26.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	314	102	159	798	61	98	766	88	53	825	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	416	0	159	859	0	98	854	0	53	989	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

Lanes, Volumes, Timings

12: Havard

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Volume (vph)	31	36	8	112	44	24	10	943	14	10	800	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	85		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.985			0.982			0.998			0.999	
Flt Protected		0.980			0.970		0.950			0.950		
Satd. Flow (prot)	0	1858	0	0	2011	0	1652	3414	0	1652	3418	0
Flt Permitted		0.839			0.775		0.303			0.249		
Satd. Flow (perm)	0	1591	0	0	1607	0	527	3414	0	433	3418	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			9			3				2
Link Speed (mph)		25			25			30				30
Link Distance (ft)		307			294			1160				1468
Travel Time (s)		8.4			8.0			26.4				33.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	39	9	122	48	26	11	1025	15	11	870	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	196	0	11	1040	0	11	878	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	0.96	1.00	1.00	0.85	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

12: Havard

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		22.0	22.0		22.0	22.0	
Total Split (s)	32.0	32.0		32.0	32.0		58.0	58.0		58.0	58.0	
Total Split (%)	35.6%	35.6%		35.6%	35.6%		64.4%	64.4%		64.4%	64.4%	
Maximum Green (s)	28.0	28.0		28.0	28.0		54.0	54.0		54.0	54.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)		15.6			15.6		66.4	66.4		66.4	66.4	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
v/c Ratio		0.29			0.69		0.03	0.41		0.03	0.35	
Control Delay		30.5			44.9		2.1	2.6		3.8	3.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		30.5			44.9		2.1	2.6		3.8	3.8	
LOS		C			D		A	A		A	A	
Approach Delay		30.5			44.9			2.6			3.8	
Approach LOS		C			D			A			A	

Intersection Summary





















Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 7.8
 Intersection LOS: A
 Intersection Capacity Utilization 48.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 12: Havard



Lanes, Volumes, Timings
15: Catalpa

4/17/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	156	57	72	129	46	67	822	100	28	780	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	95		0	55		0	250		0	600		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.960			0.961			0.984			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1788	0	1770	1790	0	1770	3483	0	1770	3529	0
Flt Permitted	0.529			0.424			0.306			0.258		
Satd. Flow (perm)	985	1788	0	790	1790	0	570	3483	0	481	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			21			23			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		331			278			1468			967	
Travel Time (s)		7.5			6.3			33.4			22.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	170	62	78	140	50	73	893	109	30	848	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	232	0	78	190	0	73	1002	0	30	868	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

Lanes, Volumes, Timings
15: Catalpa

4/17/2018

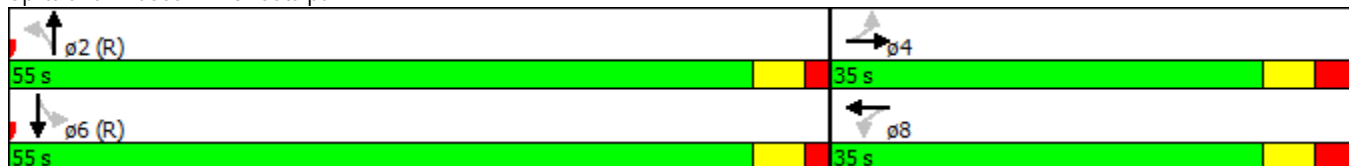


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		23.2	23.2		23.2	23.2	
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0		55.0	55.0	
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%		61.1%	61.1%	
Maximum Green (s)	29.0	29.0		29.0	29.0		49.8	49.8		49.8	49.8	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.2	5.2		5.2	5.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.2	10.2		10.2	10.2	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		62.8	62.8		62.8	62.8	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.70	0.70		0.70	0.70	
v/c Ratio	0.22	0.69		0.56	0.57		0.18	0.41		0.09	0.35	
Control Delay	32.5	41.6		47.7	35.7		9.3	7.9		2.9	2.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.5	41.6		47.7	35.7		9.3	7.9		2.9	2.9	
LOS	C	D		D	D		A	A		A	A	
Approach Delay		40.3			39.2			8.0			2.9	
Approach LOS		D			D			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 13.0 Intersection LOS: B
 Intersection Capacity Utilization 63.6% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 15: Catalpa



Lanes, Volumes, Timings
18: Wiltshire

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Volume (vph)	46	53	70	29	38	18	25	801	7	2	781	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.944			0.971			0.999			0.997	
Flt Protected		0.987			0.983		0.950			0.950		
Satd. Flow (prot)	0	1666	0	0	1707	0	1486	3076	0	1486	3070	0
Flt Permitted		0.887			0.866		0.296			0.290		
Satd. Flow (perm)	0	1497	0	0	1504	0	463	3076	0	454	3070	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			14			2			4	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		284			295			967			1007	
Travel Time (s)		7.7			8.0			22.0			22.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	58	76	32	41	20	27	871	8	2	849	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	184	0	0	93	0	27	879	0	2	865	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.05	1.14	1.14	1.05	1.14	1.25	1.19	1.14	1.25	1.19	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	27.0	27.0		27.0	27.0		23.3	23.3		23.3	23.3	
Total Split (s)	27.0	27.0		27.0	27.0		63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0		57.7	57.7		57.7	57.7	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		5.3	5.3		5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		21.0			21.0		57.7	57.7		57.7	57.7	
Actuated g/C Ratio		0.23			0.23		0.64	0.64		0.64	0.64	
v/c Ratio		0.49			0.26		0.09	0.45		0.01	0.44	

Lanes, Volumes, Timings

18: Wiltshire

4/17/2018

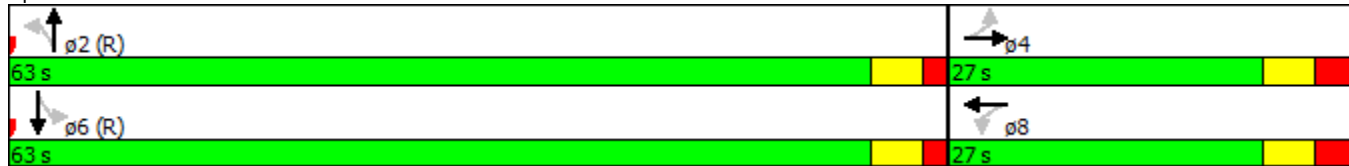


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		28.7			26.1		6.0	9.6		6.0	8.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		28.7			26.1		6.0	9.6		6.0	8.9	
LOS		C			C		A	A		A	A	
Approach Delay		28.7			26.1			9.5			8.9	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type:	CBD
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	58 (64%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	55
Control Type:	Pretimed
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	11.7
Intersection LOS:	B
Intersection Capacity Utilization	47.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 18: Wiltshire



Lanes, Volumes, Timings

21: 12 Mile

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	413	83	276	734	80	108	658	117	147	468	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.975			0.985			0.977			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1593	3106	0	1593	3138	0	1593	3112	0	1593	3112	0
Flt Permitted	0.199			0.328			0.275			0.159		
Satd. Flow (perm)	334	3106	0	550	3138	0	461	3112	0	267	3112	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			13			23			23	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		309			491			681			529	
Travel Time (s)		7.0			11.2			15.5			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	449	90	300	798	87	117	715	127	160	509	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	539	0	300	885	0	117	842	0	160	600	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings

21: 12 Mile

4/17/2018

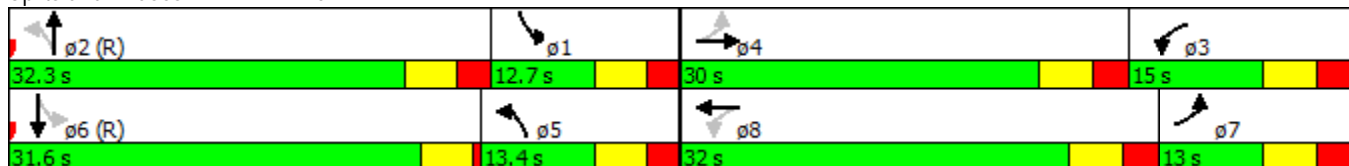


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	29.0		10.0	29.0		9.8	26.8		9.8	25.0	
Total Split (s)	13.0	30.0		15.0	32.0		13.4	32.3		12.7	31.6	
Total Split (%)	14.4%	33.3%		16.7%	35.6%		14.9%	35.9%		14.1%	35.1%	
Maximum Green (s)	7.0	24.0		9.0	26.0		7.6	26.5		6.9	27.6	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.4	2.4		2.4	2.4		2.3	2.3		2.3	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.8	5.8		5.8	4.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		16.0			16.0			14.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	27.1	20.1		37.4	26.0		33.7	26.5		34.0	30.3	
Actuated g/C Ratio	0.30	0.22		0.42	0.29		0.37	0.29		0.38	0.34	
v/c Ratio	0.90	0.75		0.80	0.97		0.44	0.90		0.79	0.56	
Control Delay	74.6	38.0		46.2	55.2		27.3	44.4		59.1	27.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	74.6	38.0		46.2	55.2		27.3	44.4		59.1	27.0	
LOS	E	D		D	E		C	D		E	C	
Approach Delay		47.1			52.9			42.3			33.7	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: CBD
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 44.9 Intersection LOS: D
 Intersection Capacity Utilization 88.5% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 21: 12 Mile



Lanes, Volumes, Timings

24:

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↕		↖	↕	
Volume (vph)	5	5	5	5	5	5	5	878	5	5	817	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	140		0	440		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.955			0.925			0.999			0.999	
Flt Protected		0.984		0.950			0.950			0.950		
Satd. Flow (prot)	0	1750	0	1770	1723	0	1770	3536	0	1770	3536	0
Flt Permitted		0.956		0.748			0.250			0.250		
Satd. Flow (perm)	0	1701	0	1393	1723	0	466	3536	0	466	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			5			2			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			225			1007			681	
Travel Time (s)		5.3			5.1			22.9			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	5	5	5	5	5	954	5	5	888	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	5	10	0	5	959	0	5	893	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)		16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio		0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio		0.02		0.01	0.01		0.03	0.68		0.03	0.63	
Control Delay		6.4		7.4	6.0		7.8	12.8		7.8	12.1	

Lanes, Volumes, Timings

24:

4/17/2018

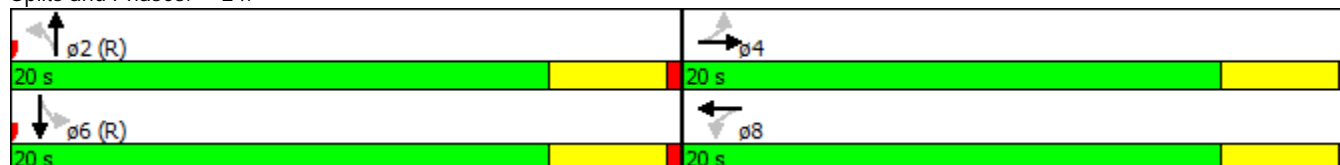


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		6.4		7.4	6.0		7.8	12.8		7.8	12.1	
LOS		A		A	A		A	B		A	B	
Approach Delay		6.4			6.5			12.8			12.1	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	12.4
Intersection LOS:	B
Intersection Capacity Utilization	36.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 24:



Arterial Level of Service

4/23/2018

Arterial Level of Service: NB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
11 Mile	III	35	60.0	16.4	76.4	0.50	23.6	C
Total	III		60.0	16.4	76.4	0.50	23.6	C

Arterial Level of Service: SB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	30	63.5	6.3	69.8	0.50	25.8	B
Total	III		63.5	6.3	69.8	0.50	25.8	B

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑		↑↑			↑	↑
Volume (vph)	0	0	0	0	822	685	0	552	0	0	564	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		265	0		0	0		230
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	5085	1583	0	3539	0	0	1863	1583
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	5085	1583	0	3539	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						225						47
Link Speed (mph)		30			30			30				30
Link Distance (ft)		262			387			99				341
Travel Time (s)		6.0			8.8			2.3				7.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	893	745	0	600	0	0	613	446
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	893	745	0	600	0	0	613	446
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type					NA	Perm		NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases						8						6
Minimum Split (s)					15.7	15.7		15.7			15.7	15.7
Total Split (s)					40.0	40.0		50.0			50.0	50.0
Total Split (%)					44.4%	44.4%		55.6%			55.6%	55.6%
Maximum Green (s)					34.3	34.3		44.7			44.3	44.3
Yellow Time (s)					3.9	3.9		3.6			3.9	3.9
All-Red Time (s)					1.8	1.8		1.7			1.8	1.8
Lost Time Adjust (s)					0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)					5.7	5.7		5.3			5.7	5.7
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)					21.0	21.0		14.0			14.0	14.0
Pedestrian Calls (#/hr)					0	0		0			0	0
Act Effct Green (s)					34.3	34.3		44.7			44.3	44.3
Actuated g/C Ratio					0.38	0.38		0.50			0.49	0.49
v/c Ratio					0.46	1.00		0.34			0.67	0.56
Control Delay					21.9	55.4		14.4			19.1	14.9

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/23/2018

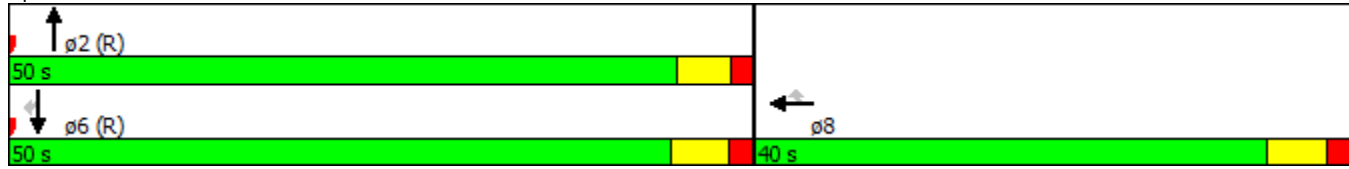


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay					0.0	0.0		0.0			0.0	0.0
Total Delay					21.9	55.4		14.4			19.1	14.9
LOS					C	E		B			B	B
Approach Delay					37.1			14.4			17.3	
Approach LOS					D			B			B	

Intersection Summary























Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	70 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	26.6
Intersection LOS:	C
Intersection Capacity Utilization	66.8%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 3: 10 Mile / 696 SD



Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	52	64	50	41	26	55	1016	33	12	894	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	45		0	1000		100	1000		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.917			0.942				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1708	0	1770	1755	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.709			0.676			0.207			0.143		
Satd. Flow (perm)	1321	1708	0	1259	1755	0	386	1863	1583	266	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		70			28				36			39
Link Speed (mph)		30			30			30				30
Link Distance (ft)		225			261			2088				2640
Travel Time (s)		5.1			5.9			47.5				60.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	57	70	54	45	28	60	1104	36	13	972	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	127	0	54	73	0	60	1104	36	13	972	82
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	29.0	29.0		29.0	29.0		24.5	24.5	24.5	24.5	24.5	24.5
Total Split (s)	33.0	33.0		33.0	33.0		57.0	57.0	57.0	57.0	57.0	57.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	27.0	27.0		27.0	27.0		51.5	51.5	51.5	51.5	51.5	51.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	2.5	2.5		2.5	2.5		1.9	1.9	1.9	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	12.0	12.0		12.0	12.0		66.5	66.5	66.5	66.5	66.5	66.5
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.74	0.74	0.74	0.74	0.74	0.74
v/c Ratio	0.56	0.44		0.32	0.28		0.21	0.80	0.03	0.07	0.71	0.07
Control Delay	47.7	21.6		38.8	25.1		3.9	11.3	0.4	7.0	12.6	3.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	21.6		38.8	25.1		3.9	11.3	0.4	7.0	12.6	3.9
LOS	D	C		D	C		A	B	A	A	B	A
Approach Delay		33.0			31.0			10.6				11.9
Approach LOS		C			C			B				B

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	14.0
Intersection LOS:	B
Intersection Capacity Utilization:	74.7%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 6: Lincoln & Coolidge



Lanes, Volumes, Timings
9: Coolidge & 11 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	595	116	64	332	65	130	661	143	63	825	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	175		0	1000		150	182		150
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.975				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3454	0	1770	3451	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.419			0.171			0.157			0.268		
Satd. Flow (perm)	780	3454	0	319	3451	0	292	1863	1583	499	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			25				43			90
Link Speed (mph)		30			30			35				30
Link Distance (ft)		441			510			2640				1160
Travel Time (s)		10.0			11.6			51.4				26.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	647	126	70	361	71	141	718	155	68	897	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	773	0	70	432	0	141	718	155	68	897	115
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
9: Coolidge & 11 Mile

4/23/2018

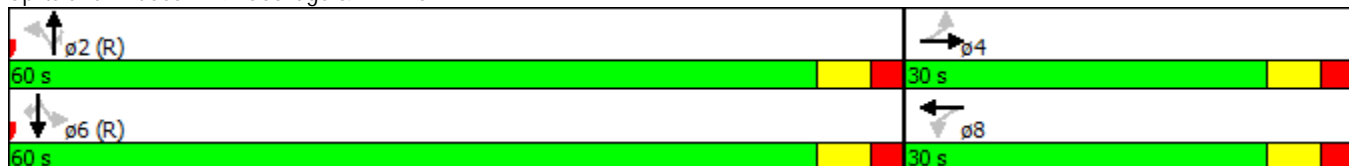


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	25.8	25.8		25.8	25.8		24.9	24.9	24.9	24.9	24.9	24.9
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%	66.7%	66.7%	66.7%	66.7%
Maximum Green (s)	24.2	24.2		24.2	24.2		54.1	54.1	54.1	54.1	54.1	54.1
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.8	5.8		5.9	5.9	5.9	5.9	5.9	5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	23.4	23.4		23.4	23.4		54.9	54.9	54.9	54.9	54.9	54.9
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.61	0.61	0.61	0.61	0.61	0.61
v/c Ratio	0.81	0.84		0.85	0.47		0.79	0.63	0.16	0.22	0.79	0.11
Control Delay	61.4	40.3		101.0	28.1		41.8	14.9	6.0	9.6	15.1	3.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	40.3		101.0	28.1		41.8	14.9	6.0	9.6	15.1	3.1
LOS	E	D		F	C		D	B	A	A	B	A
Approach Delay		44.0			38.3			17.3				13.5
Approach LOS		D			D			B				B

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	67 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.85
Intersection Signal Delay:	26.2
Intersection LOS:	C
Intersection Capacity Utilization:	93.8%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 9: Coolidge & 11 Mile



Lanes, Volumes, Timings

12: Havard

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Volume (vph)	31	36	8	36	8	22	12	1018	14	15	944	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		75	85		75
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.985			0.955				0.850			0.850
Flt Protected		0.980			0.974		0.950			0.950		
Satd. Flow (prot)	0	1858	0	0	1964	0	1652	1801	1583	1652	1801	1583
Flt Permitted		0.857			0.784		0.224			0.191		
Satd. Flow (perm)	0	1625	0	0	1581	0	389	1801	1583	332	1801	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			24				61			61
Link Speed (mph)		25			25			30				30
Link Distance (ft)		307			294			1160				1468
Travel Time (s)		8.4			8.0			26.4				33.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	39	9	39	9	24	13	1107	15	16	1026	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	72	0	13	1107	15	16	1026	16
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	0.96	1.00	1.00	0.85	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	NA	Perm	NA	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

12: Havard

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		22.0	22.0		22.0	22.0	
Total Split (s)	32.0	32.0		32.0	32.0		58.0	58.0		58.0	58.0	
Total Split (%)	35.6%	35.6%		35.6%	35.6%		64.4%	64.4%		64.4%	64.4%	
Maximum Green (s)	28.0	28.0		28.0	28.0		54.0	54.0		54.0	54.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		9.4			9.4		75.3	75.3	0.0	75.3	75.3	0.0
Actuated g/C Ratio		0.10			0.10		0.84	0.84	0.00	0.84	0.84	0.00
v/c Ratio		0.47			0.39		0.04	0.74	0.25	0.06	0.68	0.26
Control Delay		42.5			32.2		1.5	5.9	8.5	3.9	9.5	8.5
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		42.5			32.2		1.5	5.9	8.5	3.9	9.5	8.5
LOS		D			C		A	A	A	A	A	A
Approach Delay		42.5			32.2			5.9			9.4	
Approach LOS		D			C			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 9.6
 Intersection LOS: A
 Intersection Capacity Utilization 65.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 12: Havard



Lanes, Volumes, Timings

15: Catalpa

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	142	27	69	109	43	56	931	117	70	908	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	95		0	55		0	250		100	600		100
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.976			0.957				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1818	0	1770	1783	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.574			0.521			0.186			0.174		
Satd. Flow (perm)	1069	1818	0	970	1783	0	346	1863	1583	324	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			24				56			36
Link Speed (mph)		30			30			30				30
Link Distance (ft)		331			278			1468				967
Travel Time (s)		7.5			6.3			33.4				22.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	154	29	75	118	47	61	1012	127	76	987	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	183	0	75	165	0	61	1012	127	76	987	50
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
15: Catalpa

4/23/2018

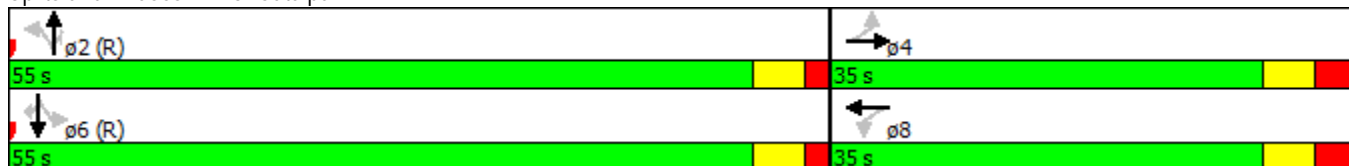


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	28.0	28.0		28.0	28.0		23.2	23.2	23.2	23.2	23.2	23.2
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Maximum Green (s)	29.0	29.0		29.0	29.0		49.8	49.8	49.8	49.8	49.8	49.8
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.2	5.2	5.2	5.2	5.2	5.2
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.2	10.2	10.2	10.2	10.2	10.2
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	13.9	13.9		13.9	13.9		64.9	64.9	64.9	64.9	64.9	64.9
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.72	0.72	0.72	0.72	0.72	0.72
v/c Ratio	0.28	0.63		0.50	0.56		0.24	0.75	0.11	0.33	0.74	0.04
Control Delay	36.3	42.6		45.3	36.5		9.7	13.4	4.6	2.5	3.1	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	42.6		45.3	36.5		9.7	13.4	4.6	2.5	3.1	0.1
LOS	D	D		D	D		A	B	A	A	A	A
Approach Delay		41.4			39.2			12.3				2.9
Approach LOS		D			D			B				A

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 13.2
 Intersection LOS: B
 Intersection Capacity Utilization 84.5%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 15: Catalpa



Lanes, Volumes, Timings

18: Wiltshire

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Volume (vph)	25	25	39	13	28	22	20	943	10	13	939	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		150
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.941			0.952				0.850			0.850
Flt Protected		0.986			0.990		0.950			0.950		
Satd. Flow (prot)	0	1659	0	0	1685	0	1486	1621	1425	1486	1621	1425
Flt Permitted		0.908			0.937		0.106			0.103		
Satd. Flow (perm)	0	1528	0	0	1595	0	166	1621	1425	161	1621	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			24				101			101
Link Speed (mph)		25			25			30				30
Link Distance (ft)		284			295			967				1357
Travel Time (s)		7.7			8.0			22.0				30.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	27	42	14	30	24	22	1025	11	14	1021	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	68	0	22	1025	11	14	1021	47
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.14	1.05	1.14	1.14	1.05	1.14	1.25	1.19	1.14	1.25	1.19	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	NA	Perm	NA	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Minimum Split (s)	27.0	27.0		27.0	27.0		23.3	23.3		23.3		23.3
Total Split (s)	27.0	27.0		27.0	27.0		63.0	63.0		63.0		63.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%		70.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		57.7	57.7		57.7		57.7
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5		3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		1.8	1.8		1.8		1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		6.0			6.0		5.3	5.3		5.3		5.3
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		7.0	7.0		7.0		7.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0		0
Act Effct Green (s)		21.0			21.0		57.7	57.7	0.0	57.7		57.7
Actuated g/C Ratio		0.23			0.23		0.64	0.64	0.00	0.64		0.64
v/c Ratio		0.25			0.17		0.21	0.99	0.11	0.14		0.98

Lanes, Volumes, Timings

18: Wiltshire

4/23/2018

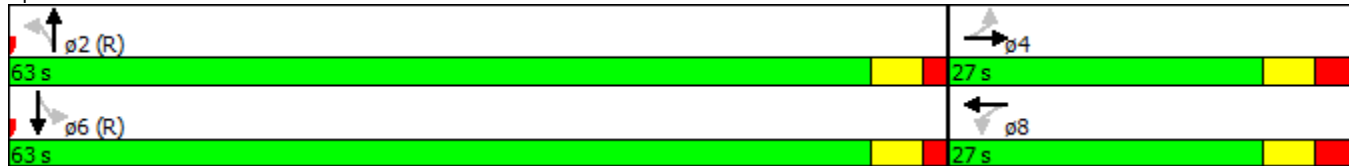


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		19.2			20.9		15.6	40.7	1.5	13.4	39.9	14.1
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		19.2			20.9		15.6	40.7	1.5	13.4	39.9	14.1
LOS		B			C		B	D	A	B	D	B
Approach Delay		19.2			20.9			39.7			38.4	
Approach LOS		B			C			D			D	

Intersection Summary

Area Type:	CBD
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	58 (64%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	0.99
Intersection Signal Delay:	37.7
Intersection LOS:	D
Intersection Capacity Utilization	73.1%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 18: Wiltshire



Lanes, Volumes, Timings

21: 12 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	133	577	139	184	454	71	173	570	166	96	725	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		500	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.971			0.980			0.966			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1593	3093	0	1593	3122	0	1593	3077	0	1593	3115	0
Flt Permitted	0.296			0.185			0.142			0.178		
Satd. Flow (perm)	496	3093	0	310	3122	0	238	3077	0	298	3115	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			19			42			22	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		309			491			331			529	
Travel Time (s)		7.0			11.2			7.5			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	627	151	200	493	77	188	620	180	104	788	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	778	0	200	570	0	188	800	0	104	924	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings

21: 12 Mile

4/23/2018

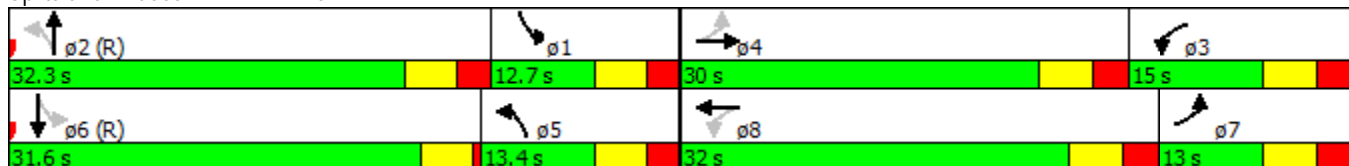


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	29.0		10.0	29.0		9.8	26.8		9.8	25.0	
Total Split (s)	13.0	30.0		15.0	32.0		13.4	32.3		12.7	31.6	
Total Split (%)	14.4%	33.3%		16.7%	35.6%		14.9%	35.9%		14.1%	35.1%	
Maximum Green (s)	7.0	24.0		9.0	26.0		7.6	26.5		6.9	27.6	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.4	2.4		2.4	2.4		2.3	2.3		2.3	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.8	5.8		5.8	4.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		16.0			16.0			14.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	34.7	23.8		30.6	21.6		35.3	29.2		32.6	27.8	
Actuated g/C Ratio	0.39	0.26		0.34	0.24		0.39	0.32		0.36	0.31	
v/c Ratio	0.44	0.93		0.86	0.75		0.91	0.78		0.51	0.95	
Control Delay	27.8	49.4		64.0	36.7		52.3	33.1		34.8	49.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.8	49.4		64.0	36.7		52.3	33.1		34.8	49.3	
LOS	C	D		E	D		D	C		C	D	
Approach Delay		46.0			43.8			36.8			47.8	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: CBD
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 43.6
 Intersection LOS: D
 Intersection Capacity Utilization 89.5%
 ICU Level of Service E
 Analysis Period (min) 15











Splits and Phases: 21: 12 Mile



Lanes, Volumes, Timings

24:

4/23/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	5	904	5	5	1043
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1694	0	1861	0	1770	1863
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1694	0	1861	0	1770	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	166		1357			331
Travel Time (s)	3.8		30.8			7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	983	5	5	1134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	988	0	5	1134
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		24			24
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	64.9%
Analysis Period (min)	15
	ICU Level of Service C

Lanes, Volumes, Timings

26:

4/23/2018



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑			↑
Volume (vph)	0	0	1237	0	0	974
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	0	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	82		341			2088
Travel Time (s)	1.9		7.8			47.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1345	0	0	1059
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1345	0	0	1059
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.6%
Analysis Period (min)	15
	ICU Level of Service A

Arterial Level of Service: NB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
11 Mile	III	35	60.0	16.3	76.3	0.50	23.6	C
Total	III		60.0	16.3	76.3	0.50	23.6	C

Arterial Level of Service: SB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	30	63.5	14.9	78.4	0.50	23.0	C
Total	III		63.5	14.9	78.4	0.50	23.0	C

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑↑	↗		↑↑			↑	↗
Volume (vph)	0	0	0	0	864	734	0	593	0	0	600	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		265	0		0	0		230
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	5085	1583	0	3539	0	0	1863	1583
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	5085	1583	0	3539	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						199						39
Link Speed (mph)		30			30			30				30
Link Distance (ft)		262			387			99				341
Travel Time (s)		6.0			8.8			2.3				7.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	939	798	0	645	0	0	652	476
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	939	798	0	645	0	0	652	476
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type					NA	Perm		NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases						8						6
Minimum Split (s)					15.7	15.7		15.7			15.7	15.7
Total Split (s)					40.0	40.0		50.0			50.0	50.0
Total Split (%)					44.4%	44.4%		55.6%			55.6%	55.6%
Maximum Green (s)					34.3	34.3		44.7			44.3	44.3
Yellow Time (s)					3.9	3.9		3.6			3.9	3.9
All-Red Time (s)					1.8	1.8		1.7			1.8	1.8
Lost Time Adjust (s)					0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)					5.7	5.7		5.3			5.7	5.7
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)					21.0	21.0		14.0			14.0	14.0
Pedestrian Calls (#/hr)					0	0		0			0	0
Act Effct Green (s)					34.3	34.3		44.7			44.3	44.3
Actuated g/C Ratio					0.38	0.38		0.50			0.49	0.49
v/c Ratio					0.48	1.10		0.37			0.71	0.60
Control Delay					22.2	86.4		14.7			20.0	15.8

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/23/2018

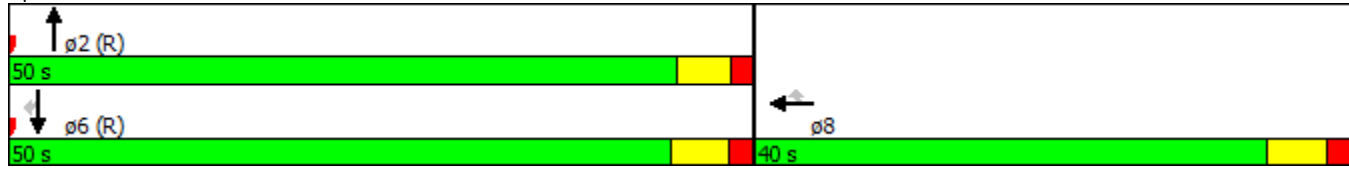


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay					0.0	0.0		0.0			0.0	0.0
Total Delay					22.2	86.4		14.7			20.0	15.8
LOS					C	F		B			C	B
Approach Delay					51.7			14.7			18.2	
Approach LOS					D			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	70 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	1.10
Intersection Signal Delay:	34.1
Intersection LOS:	C
Intersection Capacity Utilization	71.0%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 3: 10 Mile / 696 SD



Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	55	67	53	43	26	58	1095	35	13	955	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	45		0	1000		100	1000		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.918			0.944				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1710	0	1770	1758	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.708			0.662			0.172			0.095		
Satd. Flow (perm)	1319	1710	0	1233	1758	0	320	1863	1583	177	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		70			28				36			39
Link Speed (mph)		30			30			30				30
Link Distance (ft)		225			261			2088				2640
Travel Time (s)		5.1			5.9			47.5				60.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	60	73	58	47	28	63	1190	38	14	1038	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	133	0	58	75	0	63	1190	38	14	1038	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/23/2018

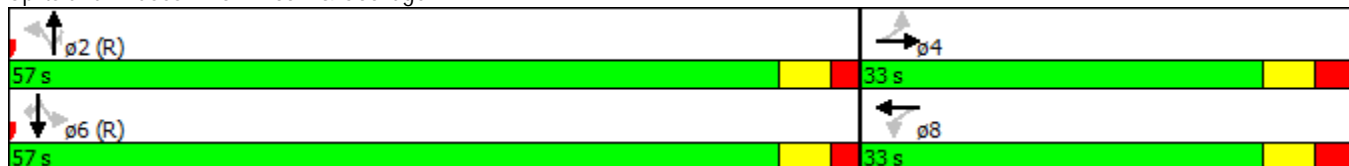


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	29.0	29.0		29.0	29.0		24.5	24.5	24.5	24.5	24.5	24.5
Total Split (s)	33.0	33.0		33.0	33.0		57.0	57.0	57.0	57.0	57.0	57.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	27.0	27.0		27.0	27.0		51.5	51.5	51.5	51.5	51.5	51.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	2.5	2.5		2.5	2.5		1.9	1.9	1.9	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	12.4	12.4		12.4	12.4		66.1	66.1	66.1	66.1	66.1	66.1
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.57	0.45		0.34	0.28		0.27	0.87	0.03	0.11	0.76	0.07
Control Delay	47.6	22.2		39.0	25.0		4.6	14.4	0.4	8.9	14.9	4.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	22.2		39.0	25.0		4.6	14.4	0.4	8.9	14.9	4.4
LOS	D	C		D	C		A	B	A	A	B	A
Approach Delay		33.3			31.1			13.5			14.1	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.87
Intersection Signal Delay:	16.2
Intersection LOS:	B
Intersection Capacity Utilization:	82.5%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 6: Lincoln & Coolidge



Lanes, Volumes, Timings
9: Coolidge & 11 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	625	122	67	349	66	137	727	150	66	882	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	175		0	1000		150	182		150
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.976				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3451	0	1770	3454	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.404			0.168			0.114			0.220		
Satd. Flow (perm)	753	3451	0	313	3454	0	212	1863	1583	410	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			24				36			89
Link Speed (mph)		30			30			35				30
Link Distance (ft)		441			510			2640				1160
Travel Time (s)		10.0			11.6			51.4				26.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	679	133	73	379	72	149	790	163	72	959	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	812	0	73	451	0	149	790	163	72	959	121
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
9: Coolidge & 11 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	25.8	25.8		25.8	25.8		24.9	24.9	24.9	24.9	24.9	24.9
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%	66.7%	66.7%	66.7%	66.7%
Maximum Green (s)	24.2	24.2		24.2	24.2		54.1	54.1	54.1	54.1	54.1	54.1
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	2.2	2.2		2.2	2.2		2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.8	5.8		5.9	5.9	5.9	5.9	5.9	5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	23.8	23.8		23.8	23.8		54.5	54.5	54.5	54.5	54.5	54.5
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.61	0.61	0.61	0.61	0.61	0.61
v/c Ratio	0.87	0.87		0.89	0.49		1.16	0.70	0.17	0.29	0.85	0.12
Control Delay	71.1	42.5		108.6	28.3		137.0	16.3	6.0	11.5	18.3	3.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.1	42.5		108.6	28.3		137.0	16.3	6.0	11.5	18.3	3.4
LOS	E	D		F	C		F	B	A	B	B	A
Approach Delay		47.5			39.5			31.1				16.3
Approach LOS		D			D			C				B

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 67 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 32.0 Intersection LOS: C
 Intersection Capacity Utilization 98.4% ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 9: Coolidge & 11 Mile



Lanes, Volumes, Timings

12: Havard

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Volume (vph)	22	13	18	38	8	23	13	1078	34	16	1044	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		75	85		75
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.953			0.955				0.850			0.850
Flt Protected		0.980			0.973		0.950			0.950		
Satd. Flow (prot)	0	1798	0	0	1962	0	1652	1801	1583	1652	1801	1583
Flt Permitted		0.853			0.854		0.187			0.173		
Satd. Flow (perm)	0	1565	0	0	1722	0	325	1801	1583	301	1801	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			25				61			61
Link Speed (mph)		25			25			30				30
Link Distance (ft)		307			294			1160				1468
Travel Time (s)		8.4			8.0			26.4				33.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	14	20	41	9	25	14	1172	37	17	1135	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	75	0	14	1172	37	17	1135	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	0.96	1.00	1.00	0.85	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	NA	Perm	NA	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

15: Catalpa

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	149	28	73	115	45	59	992	125	74	986	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	95		0	55		0	250		100	600		100
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.977			0.958				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1820	0	1770	1785	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.552			0.501			0.140			0.137		
Satd. Flow (perm)	1028	1820	0	933	1785	0	261	1863	1583	255	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			23				56			36
Link Speed (mph)		30			30			30				30
Link Distance (ft)		331			278			1468				967
Travel Time (s)		7.5			6.3			33.4				22.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	162	30	79	125	49	64	1078	136	80	1072	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	192	0	79	174	0	64	1078	136	80	1072	52
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6

Lanes, Volumes, Timings
15: Catalpa

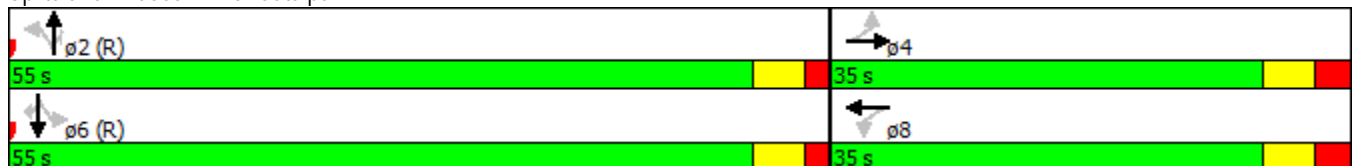
4/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	28.0	28.0		28.0	28.0		23.2	23.2	23.2	23.2	23.2	23.2
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Maximum Green (s)	29.0	29.0		29.0	29.0		49.8	49.8	49.8	49.8	49.8	49.8
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.2	5.2	5.2	5.2	5.2	5.2
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.2	10.2	10.2	10.2	10.2	10.2
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	14.3	14.3		14.3	14.3		64.5	64.5	64.5	64.5	64.5	64.5
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.72	0.72	0.72	0.72	0.72	0.72
v/c Ratio	0.29	0.64		0.53	0.57		0.34	0.81	0.12	0.44	0.80	0.05
Control Delay	36.4	42.8		46.8	37.1		12.5	16.2	4.8	3.4	4.2	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	42.8		46.8	37.1		12.5	16.2	4.8	3.4	4.2	0.1
LOS	D	D		D	D		B	B	A	A	A	A
Approach Delay		41.5			40.1			14.8				4.0
Approach LOS		D			D			B				A

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 14.7
 Intersection Capacity Utilization 88.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 15: Catalpa



Lanes, Volumes, Timings

18: Wiltshire

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Volume (vph)	26	26	41	14	29	23	21	1005	11	14	1013	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		150
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.940			0.953				0.850			0.850
Flt Protected		0.986			0.990		0.950			0.950		
Satd. Flow (prot)	0	1657	0	0	1687	0	1486	1621	1425	1486	1621	1425
Flt Permitted		0.907			0.935		0.069			0.069		
Satd. Flow (perm)	0	1525	0	0	1593	0	108	1621	1425	108	1621	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			25				101			101
Link Speed (mph)		25			25			30				30
Link Distance (ft)		284			295			967				1357
Travel Time (s)		7.7			8.0			22.0				30.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	28	45	15	32	25	23	1092	12	15	1101	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	101	0	0	72	0	23	1092	12	15	1101	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.14	1.05	1.14	1.14	1.05	1.14	1.25	1.19	1.14	1.25	1.19	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	NA	Perm	NA	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Minimum Split (s)	27.0	27.0		27.0	27.0		23.3	23.3		23.3		23.3
Total Split (s)	27.0	27.0		27.0	27.0		63.0	63.0		63.0		63.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%		70.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		57.7	57.7		57.7		57.7
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5		3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		1.8	1.8		1.8		1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		6.0			6.0		5.3	5.3		5.3		5.3
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		7.0	7.0		7.0		7.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0		0
Act Effct Green (s)		21.0			21.0		57.7	57.7	0.0	57.7		57.7
Actuated g/C Ratio		0.23			0.23		0.64	0.64	0.00	0.64		0.64
v/c Ratio		0.26			0.18		0.33	1.05	0.12	0.22		1.06

Lanes, Volumes, Timings

18: Wiltshire

4/23/2018

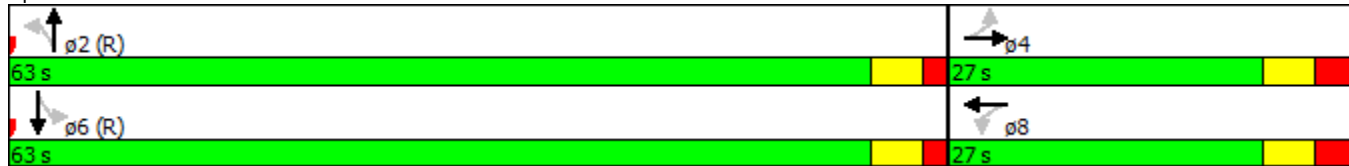


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		19.5			21.0		24.8	58.1	1.5	16.0	56.1	10.7
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		19.5			21.0		24.8	58.1	1.5	16.0	56.1	10.7
LOS		B			C		C	E	A	B	E	B
Approach Delay		19.5			21.0			56.9			53.7	
Approach LOS		B			C			E			D	

Intersection Summary

Area Type:	CBD
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	58 (64%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	100
Control Type:	Pretimed
Maximum v/c Ratio:	1.06
Intersection Signal Delay:	52.8
Intersection LOS:	D
Intersection Capacity Utilization	77.4%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 18: Wiltshire



Lanes, Volumes, Timings

21: 12 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	606	146	193	477	75	184	613	174	101	794	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		500	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.971			0.979			0.967			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1593	3093	0	1593	3118	0	1593	3080	0	1593	3115	0
Flt Permitted	0.276			0.180			0.143			0.151		
Satd. Flow (perm)	463	3093	0	302	3118	0	240	3080	0	253	3115	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			20			41			22	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		309			491			331			529	
Travel Time (s)		7.0			11.2			7.5			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	659	159	210	518	82	200	666	189	110	863	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	818	0	210	600	0	200	855	0	110	1009	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings

21: 12 Mile

4/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	29.0		10.0	29.0		9.8	26.8		9.8	25.0	
Total Split (s)	13.0	30.0		15.0	32.0		13.4	32.3		12.7	31.6	
Total Split (%)	14.4%	33.3%		16.7%	35.6%		14.9%	35.9%		14.1%	35.1%	
Maximum Green (s)	7.0	24.0		9.0	26.0		7.6	26.5		6.9	27.6	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.4	2.4		2.4	2.4		2.3	2.3		2.3	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.8	5.8		5.8	4.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		16.0			16.0			14.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	34.4	24.0		31.2	22.2		35.1	29.0		32.4	27.6	
Actuated g/C Ratio	0.38	0.27		0.35	0.25		0.39	0.32		0.36	0.31	
v/c Ratio	0.49	0.96		0.90	0.77		0.96	0.84		0.58	1.04	
Control Delay	30.2	56.0		71.4	37.0		46.1	33.1		40.6	71.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.2	56.0		71.4	37.0		46.1	33.1		40.6	71.3	
LOS	C	E		E	D		D	C		D	E	
Approach Delay		52.0			45.9			35.6			68.3	
Approach LOS		D			D			D			E	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 51.0

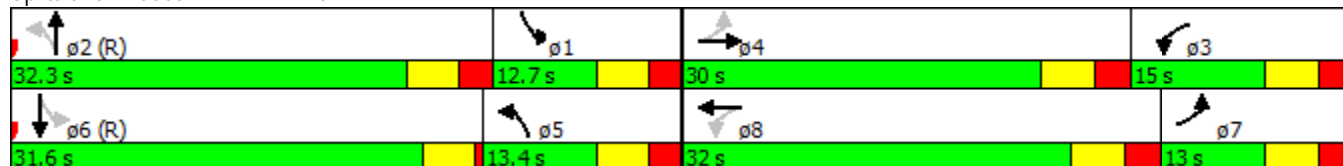
Intersection LOS: D

Intersection Capacity Utilization 94.3%

ICU Level of Service F

Analysis Period (min) 15











Splits and Phases: 21: 12 Mile



Lanes, Volumes, Timings

24:

4/23/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	5	1045	5	5	1074
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1694	0	1861	0	1770	1863
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1694	0	1861	0	1770	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	166		1357			331
Travel Time (s)	3.8		30.8			7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	1136	5	5	1167
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	1141	0	5	1167
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		24			24
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	66.5%
Analysis Period (min)	15
	ICU Level of Service C

Lanes, Volumes, Timings

26:

4/23/2018



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑			↑
Volume (vph)	0	0	1327	0	0	1038
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	3539	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	0	3539	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	82		341			2088
Travel Time (s)	1.9		7.8			47.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1442	0	0	1128
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1442	0	0	1128
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.0%
Analysis Period (min)	15
	ICU Level of Service B

Arterial Level of Service: NB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
11 Mile	III	35	60.0	14.9	74.9	0.50	24.0	B
Total	III		60.0	14.9	74.9	0.50	24.0	B

Arterial Level of Service: SB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	30	63.5	12.6	76.1	0.50	23.7	C
Total	III		63.5	12.6	76.1	0.50	23.7	C

Arterial Level of Service: NB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
11 Mile	III	35	60.0	11.6	71.6	0.50	25.1	B
Total	III		60.0	11.6	71.6	0.50	25.1	B

Arterial Level of Service: SB Coolidge

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	30	63.5	5.5	69.0	0.50	26.1	B
Total	III		63.5	5.5	69.0	0.50	26.1	B

Network Totals

Number of Intersections	8
Total Delay (hr)	103
Stops (#)	10317
Average Speed (mph)	18
Total Travel Time (hr)	248
Distance Traveled (mi)	4425
Fuel Consumed (gal)	314
Fuel Economy (mpg)	14.1
Unserved Vehicles (#)	2
Vehicles in dilemma zone (#)	37
Performance Index	131.5

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑		↑↑			↑↑	↑
Volume (vph)	0	0	0	0	822	685	0	552	0	0	564	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		265	0		0	0		230
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	5085	1583	0	3539	0	0	3539	1583
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	5085	1583	0	3539	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						225						47
Link Speed (mph)		30			30			30				30
Link Distance (ft)		262			387			99				2429
Travel Time (s)		6.0			8.8			2.3				55.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	893	745	0	600	0	0	613	446
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	893	745	0	600	0	0	613	446
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type					NA	Perm		NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases						8						6
Minimum Split (s)					15.7	15.7		15.7			15.7	15.7
Total Split (s)					40.0	40.0		50.0			50.0	50.0
Total Split (%)					44.4%	44.4%		55.6%			55.6%	55.6%
Maximum Green (s)					34.3	34.3		44.7			44.3	44.3
Yellow Time (s)					3.9	3.9		3.6			3.9	3.9
All-Red Time (s)					1.8	1.8		1.7			1.8	1.8
Lost Time Adjust (s)					0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)					5.7	5.7		5.3			5.7	5.7
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)					21.0	21.0		14.0			14.0	14.0
Pedestrian Calls (#/hr)					0	0		0			0	0
Act Effct Green (s)					34.3	34.3		44.7			44.3	44.3
Actuated g/C Ratio					0.38	0.38		0.50			0.49	0.49
v/c Ratio					0.46	1.00		0.34			0.35	0.56
Control Delay					21.9	55.4		14.4			13.1	14.9

Lanes, Volumes, Timings

3: 10 Mile / 696 SD

4/17/2018

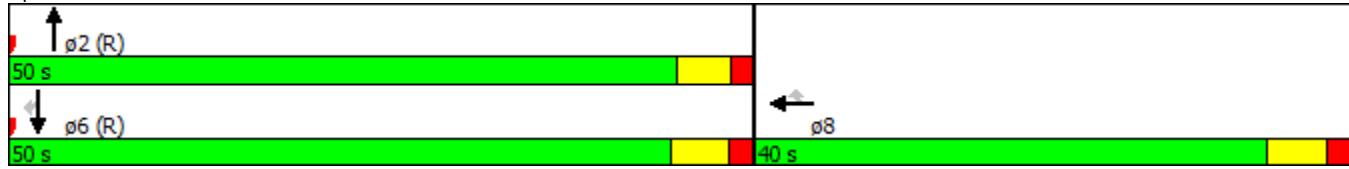


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay					0.0	0.0		0.0			0.0	0.0
Total Delay					21.9	55.4		14.4			13.1	14.9
LOS					C	E		B			B	B
Approach Delay					37.1			14.4			13.8	
Approach LOS					D			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	70 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	25.5
Intersection Capacity Utilization	66.8%
Analysis Period (min)	15
Intersection LOS:	C
ICU Level of Service	C

Splits and Phases: 3: 10 Mile / 696 SD



Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	52	64	50	41	26	55	1016	33	12	894	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	45		0	1000		0	1000		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.917			0.942			0.995			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1708	0	1770	1755	0	1770	3522	0	1770	3497	0
Flt Permitted	0.709			0.676			0.251			0.226		
Satd. Flow (perm)	1321	1708	0	1259	1755	0	468	3522	0	421	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		70			28			6			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		225			261			2429			2640	
Travel Time (s)		5.1			5.9			55.2			60.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	57	70	54	45	28	60	1104	36	13	972	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	127	0	54	73	0	60	1140	0	13	1054	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

Lanes, Volumes, Timings
6: Lincoln & Coolidge

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		24.5	24.5		24.5	24.5	
Total Split (s)	33.0	33.0		33.0	33.0		57.0	57.0		57.0	57.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	27.0	27.0		27.0	27.0		51.5	51.5		51.5	51.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	12.0	12.0		12.0	12.0		66.5	66.5		66.5	66.5	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.74	0.74		0.74	0.74	
v/c Ratio	0.56	0.44		0.32	0.28		0.17	0.44		0.04	0.41	
Control Delay	47.7	21.6		38.8	25.1		3.4	2.9		5.9	5.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.7	21.6		38.8	25.1		3.4	2.9		5.9	5.5	
LOS	D	C		D	C		A	A		A	A	
Approach Delay		33.0			31.0			3.0			5.5	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 7.9
 Intersection LOS: A
 Intersection Capacity Utilization 58.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 6: Lincoln & Coolidge



Lanes, Volumes, Timings
9: Coolidge & 11 Mile

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	595	116	64	332	65	130	661	143	63	825	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	175		0	1000		0	182		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.976			0.975			0.973			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3454	0	1770	3451	0	1770	3444	0	1770	3479	0
Flt Permitted	0.445			0.204			0.221			0.274		
Satd. Flow (perm)	829	3454	0	380	3451	0	412	3444	0	510	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31		31			38			20		
Link Speed (mph)		30		30			35			30		
Link Distance (ft)		441		510			2640			1160		
Travel Time (s)		10.0		11.6			51.4			26.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	647	126	70	361	71	141	718	155	68	897	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	773	0	70	432	0	141	873	0	68	1012	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12			12		12
Link Offset(ft)		0		0			0			0		0
Crosswalk Width(ft)		16		16			16			16		16
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94		94			94			94		94
Detector 2 Size(ft)		6		6			6			6		6
Detector 2 Type		Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0			0.0			0.0		0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4		8			2			6		6
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	

Lanes, Volumes, Timings
12: Havard

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Volume (vph)	31	36	8	36	8	22	12	1018	14	15	944	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	85		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.985			0.955			0.998			0.998	
Flt Protected		0.980			0.974		0.950			0.950		
Satd. Flow (prot)	0	1858	0	0	1964	0	1652	3414	0	1652	3414	0
Flt Permitted		0.857			0.784		0.263			0.240		
Satd. Flow (perm)	0	1625	0	0	1581	0	457	3414	0	417	3414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			24			3			3	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		307			294			1160			1468	
Travel Time (s)		8.4			8.0			26.4			33.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	39	9	39	9	24	13	1107	15	16	1026	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	72	0	13	1122	0	16	1042	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.96	1.00	1.00	0.85	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings

12: Havard

4/17/2018

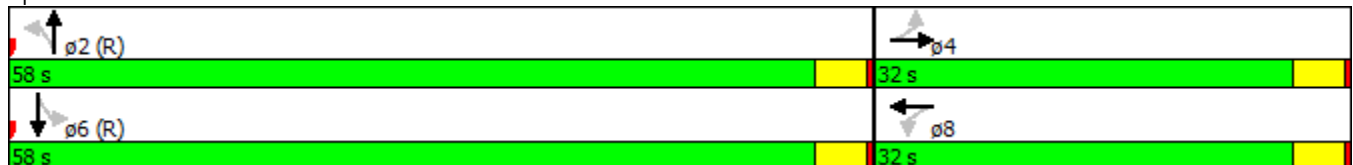


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		22.0	22.0		22.0	22.0	
Total Split (s)	32.0	32.0		32.0	32.0		58.0	58.0		58.0	58.0	
Total Split (%)	35.6%	35.6%		35.6%	35.6%		64.4%	64.4%		64.4%	64.4%	
Maximum Green (s)	28.0	28.0		28.0	28.0		54.0	54.0		54.0	54.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)		9.4			9.4		75.3	75.3		75.3	75.3	
Actuated g/C Ratio		0.10			0.10		0.84	0.84		0.84	0.84	
v/c Ratio		0.47			0.39		0.03	0.39		0.05	0.36	
Control Delay		42.5			32.2		1.9	2.3		3.7	3.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		42.5			32.2		1.9	2.3		3.7	3.1	
LOS		D			C		A	A		A	A	
Approach Delay		42.5			32.2			2.3			3.1	
Approach LOS		D			C			A			A	

Intersection Summary






















Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 5.0
 Intersection Capacity Utilization 40.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 12: Havard



Lanes, Volumes, Timings
15: Catalpa

4/17/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	142	27	69	109	43	56	931	117	70	908	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	95		0	55		0	250		0	600		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.976			0.957			0.983				0.993
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1818	0	1770	1783	0	1770	3479	0	1770	3514	0
Flt Permitted	0.574			0.521			0.252			0.221		
Satd. Flow (perm)	1069	1818	0	970	1783	0	469	3479	0	412	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			24			24			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		331			278			1468			967	
Travel Time (s)		7.5			6.3			33.4			22.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	154	29	75	118	47	61	1012	127	76	987	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	183	0	75	165	0	61	1139	0	76	1037	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

Lanes, Volumes, Timings
15: Catalpa

4/17/2018

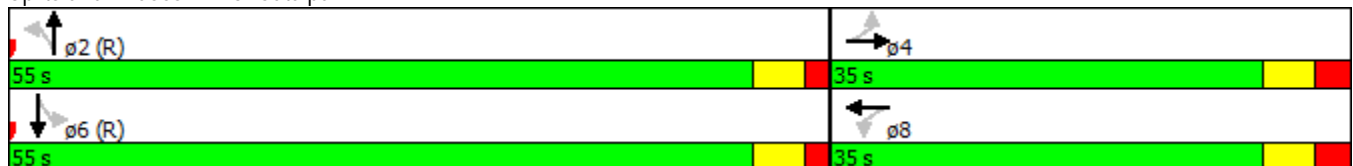


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		23.2	23.2		23.2	23.2	
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0		55.0	55.0	
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%		61.1%	61.1%	
Maximum Green (s)	29.0	29.0		29.0	29.0		49.8	49.8		49.8	49.8	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.2	5.2		5.2	5.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.2	10.2		10.2	10.2	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	13.9	13.9		13.9	13.9		64.9	64.9		64.9	64.9	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.72	0.72		0.72	0.72	
v/c Ratio	0.28	0.63		0.50	0.56		0.18	0.45		0.26	0.41	
Control Delay	36.3	42.6		45.3	36.5		7.2	6.0		2.9	1.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.3	42.6		45.3	36.5		7.2	6.0		2.9	1.3	
LOS	D	D		D	D		A	A		A	A	
Approach Delay		41.4			39.2			6.1			1.4	
Approach LOS		D			D			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	10.0
Intersection LOS:	A
Intersection Capacity Utilization	64.9%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 15: Catalpa



Lanes, Volumes, Timings

18: Wiltshire

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Volume (vph)	25	25	39	13	28	22	20	943	10	13	939	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.941			0.952			0.998			0.993	
Flt Protected		0.986			0.990		0.950			0.950		
Satd. Flow (prot)	0	1659	0	0	1685	0	1486	3073	0	1486	3058	0
Flt Permitted		0.908			0.937		0.224			0.235		
Satd. Flow (perm)	0	1528	0	0	1595	0	350	3073	0	368	3058	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			24			2			10	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		284			295			967			1007	
Travel Time (s)		7.7			8.0			22.0			22.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	27	42	14	30	24	22	1025	11	14	1021	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	68	0	22	1036	0	14	1068	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.05	1.14	1.14	1.05	1.14	1.25	1.19	1.14	1.25	1.19	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	27.0	27.0		27.0	27.0		23.3	23.3		23.3	23.3	
Total Split (s)	27.0	27.0		27.0	27.0		63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0		57.7	57.7		57.7	57.7	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		5.3	5.3		5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		21.0			21.0		57.7	57.7		57.7	57.7	
Actuated g/C Ratio		0.23			0.23		0.64	0.64		0.64	0.64	
v/c Ratio		0.25			0.17		0.10	0.53		0.06	0.54	

Lanes, Volumes, Timings

18: Wiltshire

4/17/2018

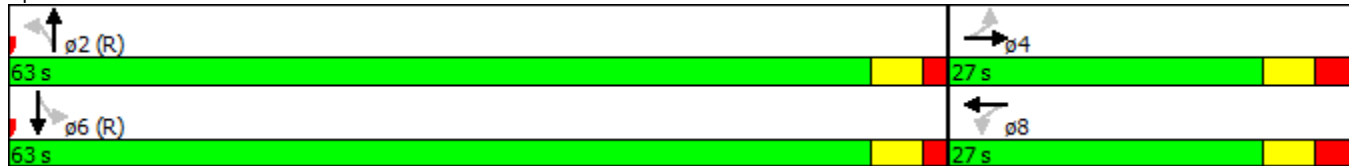


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		19.2			20.9		8.1	12.7		9.3	16.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		19.2			20.9		8.1	12.7		9.3	16.2	
LOS		B			C		A	B		A	B	
Approach Delay		19.2			20.9			12.6			16.1	
Approach LOS		B			C			B			B	

Intersection Summary

Area Type:	CBD
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	58 (64%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Pretimed
Maximum v/c Ratio:	0.54
Intersection Signal Delay:	14.8
Intersection LOS:	B
Intersection Capacity Utilization	48.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 18: Wiltshire



Lanes, Volumes, Timings

21: 12 Mile

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	133	577	139	184	454	71	173	570	166	96	725	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.971			0.980			0.966			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1593	3093	0	1593	3122	0	1593	3077	0	1593	3115	0
Flt Permitted	0.296			0.185			0.142			0.178		
Satd. Flow (perm)	496	3093	0	310	3122	0	238	3077	0	298	3115	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			19			42			22	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		309			491			681			529	
Travel Time (s)		7.0			11.2			15.5			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	627	151	200	493	77	188	620	180	104	788	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	778	0	200	570	0	188	800	0	104	924	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings

21: 12 Mile

4/17/2018

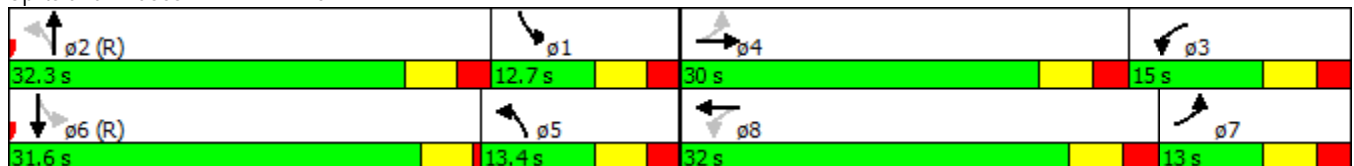


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	29.0		10.0	29.0		9.8	26.8		9.8	25.0	
Total Split (s)	13.0	30.0		15.0	32.0		13.4	32.3		12.7	31.6	
Total Split (%)	14.4%	33.3%		16.7%	35.6%		14.9%	35.9%		14.1%	35.1%	
Maximum Green (s)	7.0	24.0		9.0	26.0		7.6	26.5		6.9	27.6	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.4	2.4		2.4	2.4		2.3	2.3		2.3	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.8	5.8		5.8	4.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		16.0			16.0			14.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	34.7	23.8		30.6	21.6		35.3	29.2		32.6	27.8	
Actuated g/C Ratio	0.39	0.26		0.34	0.24		0.39	0.32		0.36	0.31	
v/c Ratio	0.44	0.93		0.86	0.75		0.91	0.78		0.51	0.95	
Control Delay	27.8	49.4		64.0	36.7		68.6	24.4		34.8	49.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.8	49.4		64.0	36.7		68.6	24.4		34.8	49.3	
LOS	C	D		E	D		E	C		C	D	
Approach Delay		46.0			43.8			32.8			47.8	
Approach LOS		D			D			C			D	

Intersection Summary

Area Type:	CBD	
Cycle Length:	90	
Actuated Cycle Length:	90	
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle:	90	
Control Type:	Actuated-Coordinated	
Maximum v/c Ratio:	0.95	
Intersection Signal Delay:	42.5	Intersection LOS: D
Intersection Capacity Utilization	89.5%	ICU Level of Service E
Analysis Period (min)	15	

Splits and Phases: 21: 12 Mile



Lanes, Volumes, Timings

24: Beverly

4/17/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↙	↘		↙	↕		↙	↕	
Volume (vph)	5	5	5	5	5	9	5	900	0	5	1048	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	11	11	12	11	11	12
Storage Length (ft)	0		0	75		0	140		0	440		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.955			0.900							
Flt Protected		0.984		0.950			0.950			0.950		
Satd. Flow (prot)	0	1750	0	1652	1565	0	1711	3421	0	1711	3421	0
Flt Permitted		0.984		0.950			0.950			0.950		
Satd. Flow (perm)	0	1750	0	1652	1565	0	1711	3421	0	1711	3421	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		253			200			1007			681	
Travel Time (s)		6.9			5.5			22.9			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	5	5	5	10	5	978	0	5	1139	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	5	15	0	5	978	0	5	1139	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.00	1.04	1.04	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.8%
ICU Level of Service	A
Analysis Period (min)	15