

APPENDIX H:

Capacity Analysis Worksheets

2: 3rd Street & Market Street

Existing Signal Phasing

Timing Plan: PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Future Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	11	12
Satd. Flow (prot)	0	1597	0	0	1588	0	0	1416	0	0	1465	0
Flt Permitted		0.994			0.991			0.954			0.845	
Satd. Flow (perm)	0	1589	0	0	1575	0	0	1359	0	0	1261	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			386			618			594	
Travel Time (s)		10.7			10.5			16.9			16.2	
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	7%	7%	38%	7%	18%	0%	8%	6%	3%	0%	5%
Parking (#/hr)		0			0			0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	449	0	0	169	0	0	109	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			10			14	
Permitted Phases	2			6			10			14		
Detector Phase	2	2		6	6		10	10		14	14	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		2.0	2.0		2.0	2.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0		13.0	13.0	
Total Split (s)	34.0	34.0		34.0	34.0		36.0	36.0		36.0	36.0	
Total Split (%)	37.8%	37.8%		37.8%	37.8%		40.0%	40.0%		40.0%	40.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effect Green (s)		29.0			29.0			16.0			16.0	
Actuated g/C Ratio		0.40			0.40			0.22			0.22	
v/c Ratio		0.58			0.71			0.56			0.39	
Control Delay		24.9			30.0			34.1			29.8	
Queue Delay		0.1			0.1			0.0			0.0	
Total Delay		25.0			30.1			34.1			29.8	
LOS		C			C			C			C	
Approach Delay		25.0			30.1			34.1			29.8	
Approach LOS		C			C			C			C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 72.3												

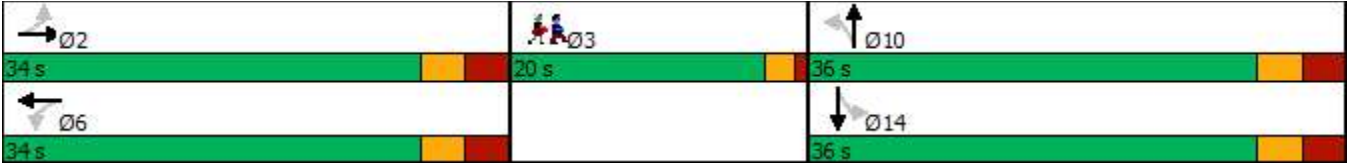
Lanes, Volumes, Timings

Synchro 10 Report
B. Guthrie

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 29.0	Intersection LOS: C
Intersection Capacity Utilization 51.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: 3rd Street & Market Street



2: 3rd Street & Market Street

Reduced Cycle Length

Timing Plan: PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Future Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	11	12
Satd. Flow (prot)	0	1597	0	0	1588	0	0	1415	0	0	1465	0
Flt Permitted		0.994			0.991			0.947			0.789	
Satd. Flow (perm)	0	1589	0	0	1575	0	0	1348	0	0	1177	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			386			618			594	
Travel Time (s)		10.7			10.5			16.9			16.2	
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	7%	7%	38%	7%	18%	0%	8%	6%	3%	0%	5%
Parking (#/hr)		0			0			0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	449	0	0	169	0	0	109	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			10			14	
Permitted Phases	2			6			10			14		
Detector Phase	2	2		6	6		10	10		14	14	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		2.0	2.0		2.0	2.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0		13.0	13.0	
Total Split (s)	33.0	33.0		33.0	33.0		17.0	17.0		17.0	17.0	
Total Split (%)	47.1%	47.1%		47.1%	47.1%		24.3%	24.3%		24.3%	24.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effect Green (s)		28.7			28.7			11.0			11.0	
Actuated g/C Ratio		0.43			0.43			0.16			0.16	
v/c Ratio		0.54			0.67			0.77			0.57	
Control Delay		20.2			24.0			53.8			41.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.2			24.0			53.8			41.1	
LOS		C			C			D			D	
Approach Delay		20.2			24.0			53.8			41.1	
Approach LOS		C			C			D			D	
Intersection Summary												
Area Type:	Other											
Cycle Length: 70												
Actuated Cycle Length: 67.1												

Lanes, Volumes, Timings

Synchro 10 Report
B. Guthrie

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	29%
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 29.0	Intersection LOS: C
Intersection Capacity Utilization 51.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: 3rd Street & Market Street



2: 3rd Street & Market Street

Pedestrian Phase Each Cycle

Timing Plan: PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Future Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	11	12
Satd. Flow (prot)	0	1597	0	0	1588	0	0	1416	0	0	1465	0
Flt Permitted		0.994			0.991			0.954			0.824	
Satd. Flow (perm)	0	1589	0	0	1575	0	0	1359	0	0	1229	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			386			618			594	
Travel Time (s)		10.7			10.5			16.9			16.2	
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	7%	7%	38%	7%	18%	0%	8%	6%	3%	0%	5%
Parking (#/hr)		0			0			0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	449	0	0	169	0	0	109	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			10			14	
Permitted Phases	2			6			10			14		
Detector Phase	2	2		6	6		10	10		14	14	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		2.0	2.0		2.0	2.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0		13.0	13.0	
Total Split (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Total Split (%)	43.3%	43.3%		43.3%	43.3%		34.4%	34.4%		34.4%	34.4%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effect Green (s)		33.1			33.1			17.1			17.1	
Actuated g/C Ratio		0.40			0.40			0.21			0.21	
v/c Ratio		0.58			0.71			0.60			0.43	
Control Delay		24.7			29.4			38.6			33.4	
Queue Delay		0.7			1.6			0.0			0.0	
Total Delay		25.4			31.0			38.6			33.4	
LOS		C			C			D			C	
Approach Delay		25.4			31.0			38.6			33.4	
Approach LOS		C			C			D			C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 82.3												

Lanes, Volumes, Timings

Synchro 10 Report
B. Guthrie

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 30.5

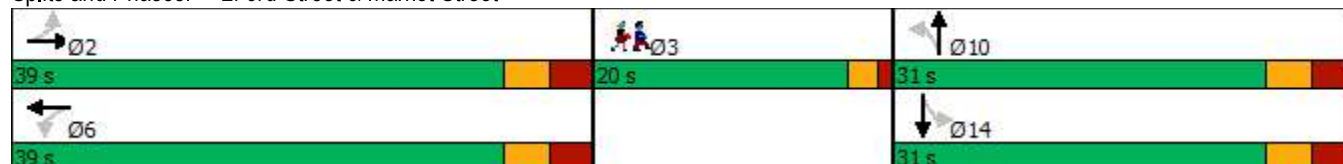
Intersection LOS: C

Intersection Capacity Utilization 51.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: 3rd Street & Market Street



2: 3rd Street & Market Street

Pre-Timed/Coordinated

Timing Plan: PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Future Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	11	12
Satd. Flow (prot)	0	1597	0	0	1588	0	0	1416	0	0	1465	0
Flt Permitted		0.994			0.991			0.955			0.822	
Satd. Flow (perm)	0	1589	0	0	1575	0	0	1360	0	0	1226	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			386			618			594	
Travel Time (s)		10.7			10.5			16.9			16.2	
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	7%	7%	38%	7%	18%	0%	8%	6%	3%	0%	5%
Parking (#/hr)		0			0			0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	449	0	0	169	0	0	109	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			10			14	
Permitted Phases	2			6			10			14		
Detector Phase	2	2		6	6		10	10		14	14	
Switch Phase												
Minimum Initial (s)	17.0	17.0		17.0	17.0		2.0	2.0		2.0	2.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		8.0	8.0		8.0	8.0	
Total Split (s)	45.0	45.0		45.0	45.0		25.0	25.0		25.0	25.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		27.8%	27.8%		27.8%	27.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		39.0			39.0			19.0			19.0	
Actuated g/C Ratio		0.43			0.43			0.21			0.21	
v/c Ratio		0.54			0.66			0.59			0.42	
Control Delay		22.4			25.9			41.5			36.7	
Queue Delay		1.3			2.9			0.0			0.0	
Total Delay		23.7			28.8			41.5			36.7	
LOS		C			C			D			D	
Approach Delay		23.7			28.8			41.5			36.7	
Approach LOS		C			C			D			D	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												

Lanes, Volumes, Timings

Synchro 10 Report
B. Guthrie

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 29.8

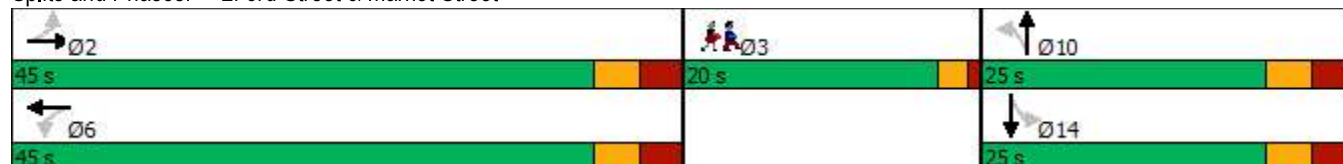
Intersection LOS: C

Intersection Capacity Utilization 51.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: 3rd Street & Market Street



2: 3rd Street & Market Street

Two Ped Phases Each Cycle

Timing Plan: PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Future Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	11	12
Satd. Flow (prot)	0	1597	0	0	1588	0	0	1415	0	0	1465	0
Flt Permitted		0.993			0.990			0.954			0.731	
Satd. Flow (perm)	0	1587	0	0	1574	0	0	1358	0	0	1091	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			386			618			594	
Travel Time (s)		10.7			10.5			16.9			16.2	
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	7%	7%	38%	7%	18%	0%	8%	6%	3%	0%	5%
Parking (#/hr)		0			0			0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	449	0	0	169	0	0	109	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			10			14	
Permitted Phases	2			6			10			14		
Detector Phase	2	2		6	6		10	10		14	14	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		2.0	2.0		2.0	2.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0		13.0	13.0	
Total Split (s)	31.0	31.0		31.0	31.0		19.0	19.0		19.0	19.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		21.1%	21.1%		21.1%	21.1%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effect Green (s)		26.6			26.6			13.4			13.4	
Actuated g/C Ratio		0.32			0.32			0.16			0.16	
v/c Ratio		0.72			0.89			0.77			0.62	
Control Delay		40.0			54.2			63.4			54.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		40.0			54.2			63.4			54.9	
LOS		D			D			E			D	
Approach Delay		40.0			54.2			63.4			54.9	
Approach LOS		D			D			E			D	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 82.9												

Lane Group	Ø3	Ø15
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	15
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	8.0	5.0
Minimum Split (s)	20.0	23.5
Total Split (s)	20.0	20.0
Total Split (%)	22%	22%
Yellow Time (s)	2.0	3.5
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 50.9	Intersection LOS: D
Intersection Capacity Utilization 51.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: 3rd Street & Market Street



2: 3rd Street & Market Street

Exclusive and Concurrent Pedestrian Phases

Timing Plan: PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Future Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	11	12
Satd. Flow (prot)	0	1597	0	0	1588	0	0	1416	0	0	1465	0
Flt Permitted		0.994			0.991			0.955			0.847	
Satd. Flow (perm)	0	1589	0	0	1575	0	0	1361	0	0	1264	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			386			618			594	
Travel Time (s)		10.7			10.5			16.9			16.2	
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	7%	7%	38%	7%	18%	0%	8%	6%	3%	0%	5%
Parking (#/hr)		0			0			0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	449	0	0	169	0	0	109	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			10			14	
Permitted Phases	2			6			10			14		
Detector Phase	2	2		6	6		10	10		14	14	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		2.0	2.0		2.0	2.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0		13.0	13.0	
Total Split (s)	34.0	34.0		34.0	34.0		36.0	36.0		36.0	36.0	
Total Split (%)	37.8%	37.8%		37.8%	37.8%		40.0%	40.0%		40.0%	40.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effect Green (s)		31.6			31.6			17.4			17.4	
Actuated g/C Ratio		0.41			0.41			0.23			0.23	
v/c Ratio		0.56			0.69			0.55			0.38	
Control Delay		24.8			29.5			33.3			29.2	
Queue Delay		0.1			0.1			0.0			0.0	
Total Delay		24.9			29.6			33.3			29.2	
LOS		C			C			C			C	
Approach Delay		24.9			29.6			33.3			29.2	
Approach LOS		C			C			C			C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 76.5												

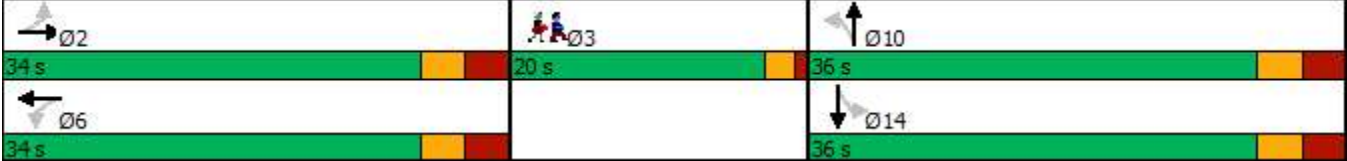
Lanes, Volumes, Timings

Synchro 10 Report
B. Guthrie

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 51.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: 3rd Street & Market Street



2: 3rd Street & Market Street

Eliminate Exclusive Pedestrian Phase

Timing Plan: PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Future Volume (vph)	5	312	27	8	392	17	19	73	66	38	43	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	11	12
Satd. Flow (prot)	0	1597	0	0	1588	0	0	1416	0	0	1465	0
Flt Permitted		0.995			0.992			0.953			0.852	
Satd. Flow (perm)	0	1591	0	0	1577	0	0	1358	0	0	1271	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			386			618			594	
Travel Time (s)		10.7			10.5			16.9			16.2	
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	7%	7%	38%	7%	18%	0%	8%	6%	3%	0%	5%
Parking (#/hr)		0			0			0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	449	0	0	169	0	0	109	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			10			14	
Permitted Phases	2			6			10			14		
Detector Phase	2	2		6	6		10	10		14	14	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		2.0	2.0		2.0	2.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	41.0	41.0		41.0	41.0		24.0	24.0		24.0	24.0	
Total Split (%)	63.1%	63.1%		63.1%	63.1%		36.9%	36.9%		36.9%	36.9%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Act Effect Green (s)		35.1			35.1			14.5			14.5	
Actuated g/C Ratio		0.57			0.57			0.24			0.24	
v/c Ratio		0.41			0.50			0.53			0.37	
Control Delay		9.9			11.2			26.9			23.2	
Queue Delay		0.0			0.4			0.0			0.0	
Total Delay		9.9			11.5			26.9			23.2	
LOS		A			B			C			C	
Approach Delay		9.9			11.5			26.9			23.2	
Approach LOS		A			B			C			C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 65												
Actuated Cycle Length: 61.6												

Lanes, Volumes, Timings

Synchro 10 Report
B. Guthrie

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 14.5

Intersection LOS: B

Intersection Capacity Utilization 51.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: 3rd Street & Market Street

